A-B Tech

1993
1994

Asheville-Buncombe Technical Community College

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ASHEVILLE-BUNCOMBE TECHNICAL COMMUNITY COLLEGE

340 Victoria Road
Asheville, N.C. 28801

Phone: (704) 254-1921

Recognized and Approved by
North Carolina State Board of Education
North Carolina Department of Community Colleges
North Carolina Office of Emergency Medical Services
Division of Vocational Rehabilitation
and for Veterans Participation

Member of
American Association of Community and Junior Colleges
North Carolina Department of Community Colleges
Student Services Personnel Association
N.C.A.C.C. Instructional Administrators
Association of Community College Business Officials
American Library Association
Learning Resources Association
Council for Advancement and Support of Education

Accredited By
North Carolina Board of Nursing
National Accrediting Agency for Clinical Laboratory Sciences
American Medical Association
American Dental Association, Commission on Dental Accreditation
Asheville-Buncombe Technical Community College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award Associate degrees.

Catalog of Courses

Day and Evening College

Volume 31
1993-1994

DIRECTORY FOR COLLEGE SERVICES AND OFFICES

Academic Programs	Vice President, Instructional Services Simpson Administration Building Extension 120
For Evening and Off-Campus Programs	Assistant Vice President, Instructional Services Simpson Administration Building Extension 121
Admissions, Applications, Catalogs	Admission's Office Azalea Building Extension 149
Books	Bookstore Oak Gym/Student Center Extension 200
Continuing Education	Pines Building Extension 138
Counseling	Counselors Student Services Azalea Building Extension 142, 146, 206
Disabled Student Services	Coordinator of Special Needs, Student Services Azalea Building Extension 141
Emergencies	Security Office Extension 125
Financial Aid	Financial Aid Office Simpson Administration Building Extension 160
GED Preparation	Pines Building Extension 132/136
GED Testing	GED Examiner Pines Building Extension 132/136
GED Test Result/Transcripts	Continuing Education Pines Building Extension 312

Grade Changes	Class Instructor
News, Publications	Director of Development Simpson Administration Building Extension 116
Parking Permits	Accounting Clerk/Cashier Simpson Administration Building Extension 152
Payments, Student Accounts	Business Office Simpson Administration Building Extension 152/156
Student Academic Records, Transcripts, Registration, Drop/Add Classes	Registrar's Office Azalea Building Extension 147/148
Student Activities, Intramurals, and Wellness	Director of Student Activities Oak Gym/Student Center Extension 203
Transfer Credits/Transcript Evaluation (Transfer to A-B Tech)	Director of Admissions Student Services Azalea Building Extension 149
Transfer-to-Senior-College Information	Transfer Counselor Azalea Building Extension 146
Tutoring	Guided Studies Laurel Building Extension 314
Veterans	Veteran's Service Office Azalea Building Extension 206
Visiting the Campus	College Recruiter Oak Gym/Student Center Extension 210

Address correspondence to the appropriate office in care of
Asheville-Buncombe Technical Community College
340 Victoria Road
Asheville, NC 28801
(704) 254-1921

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Enrollment will determine offering or continuing a curriculum.
*Curricula offered in both day and evening hours.

COLLEGE CALENDARS 1993-1994

FALL QUARTER

Registration: Curriculum Freshmen (By Appointment.)	August 2,3,4,5
Registration: Current Students	August 9-13
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	September 3
Registration: New Unclassified Students	September 7
Freshman Orientation	September 7
Classes Begin	September 8
Last Day for Registration	September 14
Last Day to Drop For a Refund	September 20
High School Visitation Day	T.B.A.
Last Day Of Examinations	November 23
Total Class Days	55
Optional Day	November 24,29
Holidays: Thanksgiving	November 25, 26

WINTER QUARTER

Registration: Current Students-	Nov. 8-12
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	November 30
Registration: New Students (By Appointment)	November 30
Classes Begin	December 1
Last Day For Registration	December 7
Last Day to Drop For a Refund	December 13
Last Day For Examinations	February 28
Total Class Days	55
*Optional Days	March 1,2,3,4
Holidays: Christmas and New Year's Holidays	December 22-31
Martin Luther King, Jr	January 17

SPRING QUARTER

Registration: Current Students	Feb. 7-11
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	March 4
Registration: New Students (By Appointment)	March 7
Classes Begin	March 8
Last Day For Registration	March 14
Last Day to Drop For a Refund	March 18
Graduation Confirmation Week	April 18-22
Last Day Of Examinations	May 25
Total Class Days	55
Optional Days	May 26, 27,28,31-June 1,2,3
Holidays: Good Friday	April 1
Easter Monday	April 4

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* Up to four days lost due to inclement weather may be made up at this time.

SUMMER QUARTER

Registration: Currently Enrolled Students	May 9-13
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	June 3
Registration: New Students (By Appointment)	June 6
Classes Begin	June 7
Last Day For Registration	June 13
Last Day to Drop For a Refund	June 17
Graduation Confirmation Week	July 18-22
Last Day Of Examinations	August 23
Graduation	August 26
Total Class Days	55
Optional Days	August 24, 25, 29, 30,31-Sept.1,2
Holidays: Independence Day	July 4
Labor Day	September 5

Twelve months faculty may select any 14 optional days as vacation; nine months faculty, any 10.5 days. Remaining optional days are faculty workdays.

EVENING AND WEEKEND COLLEGE CALENDAR 1993-94

FALL QUARTER

Registration: Curriculum Freshmen (By Appointment)	August 2-5
Registration: Current Students	August 9-13
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	September 3
Registration: New Unclassified Students (By Appointment)	September 7
Freshman Orientation	September 7
Classes Begin	September 8
Last Night for Registration	September 14
Last Night to Drop for a Refund	September 20
Last Date of Scheduled Classes	November 23
Total Class Days	55
Holidays: Thanksgiving	November 25-26

WINTER QUARTER

Registration: Current Students	November 8-12
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	November 30
Registration: New Students (By Appointment)	November 30
Classes Begin	December 1
Last Night for Registration	December 7
Last Night to Drop for a Refund	December 13
Last Date of Scheduled Classes	February 28
Total Class Days	55
*Inclement Weather Make-Up Dates	March 1,2, 3, 4
Holidays: Christmas and New Year's Holidays	December 22-31
Martin Luther King, Jr.	January 17

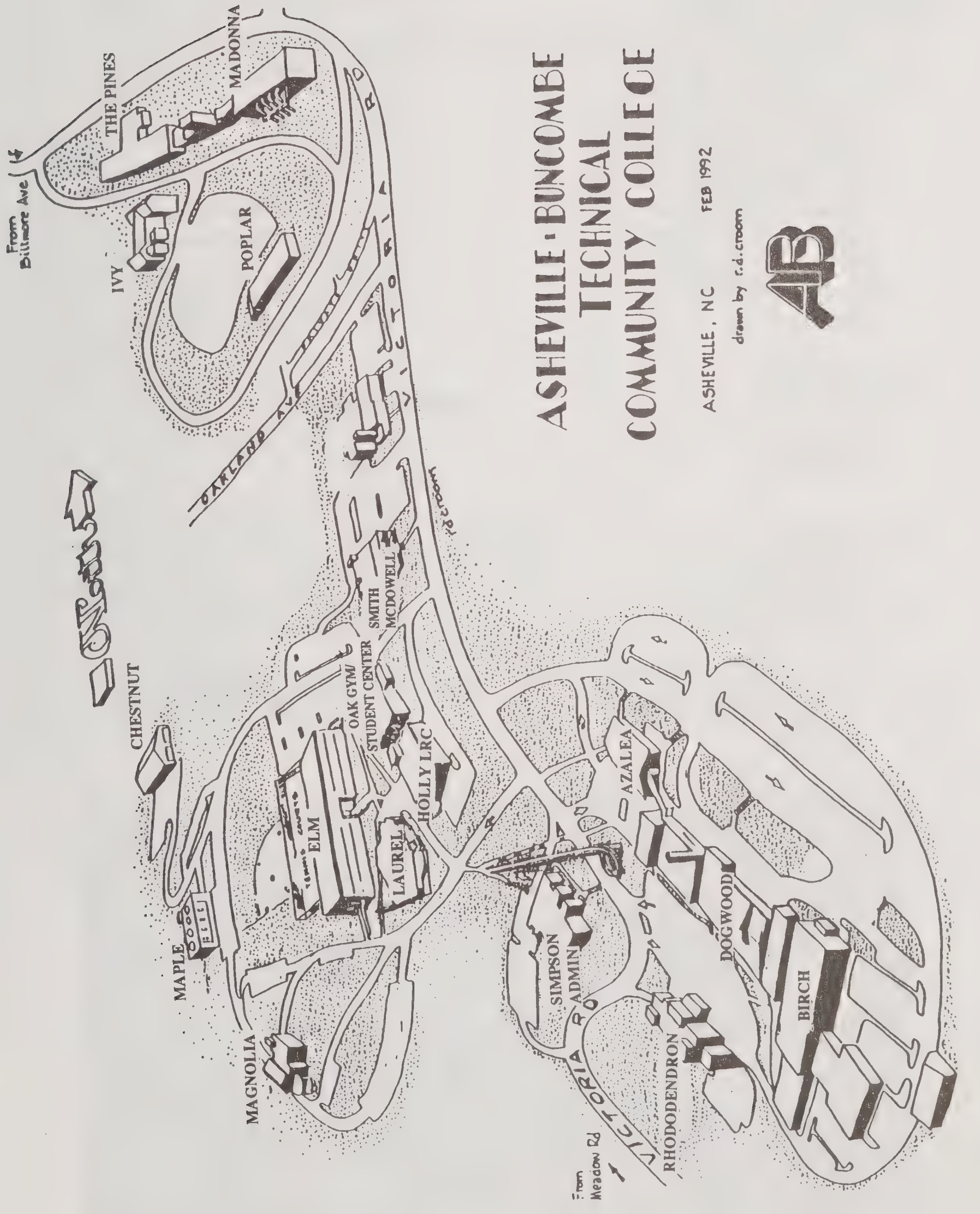
*Classes missed because of inclement weather may be made up during this period.

SPRING QUARTER

Registration: Current Students	February 7-11
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	March 4
Registration: New Students (By Appointment)	March 7
Classes Begin	March 8
Last Night for Registration	March 14
Last Night to Drop for a Refund	March 18
Graduation Confirmation Week	April 18-22
Last Date of Scheduled Classes	May 25
Total Class Days	55
Holidays: Good Friday	April 1
Easter Monday	April 4

SUMMER QUARTER

Registration: Current Students	May 9-13
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	June 3
Registration: New Students (By Appointment)	June 6
Classes Begin	June 7
Last Night for Registration	June 13
Last Night to Drop for a Refund	June 17
Graduation Confirmation Week	July 18-22
Last Date of Scheduled Classes	August 23
Graduation	August 26
Total Class Days	55
Holidays: Independence Day	July 4
Labor Day	September 5


ASHEVILLE-BUNCOMBE
TECHNICAL
COMMUNITY COLLEGE
ASHEVILLE, NC
FEB 1992
drawn by r.d.croom
AB
From Biltmore Ave
THE PINES
MADONNA
IVY
POPLAR
OAKLAND AV
VICTORIA RD
r.d.croom
North
CHESTNUT
SMITH
MCDOWELL
OAK GYM/
STUDENT CENTER
HOLLY LRC
ELM
Tennis courts
LAUREL
MAPLE
MAGNOLIA
AZALEA
SIMPSON
ADMIN
DOGWOOD
BIRCH
RHODODENDRON
VICTORIA RD
From Meadow Rd

BUILDINGS LEGEND

Main Campus

Thomas W. Simpson Administration Building
- Administrative Computer Systems
- Administrative Services
- Business Office
- Development Office
- Elevated Lecture Room
- Financial Aid Office
- Office of the President
- Offices of Instruction
- Personnel Office
- President

Azalea Building
- Admissions
- Counseling Offices
- Registrar

Birch Building
- Accounting
- Administrative Office Technology
- Business Administration
- Business Computer Programming
- Cafeteria
- Culinary Technology
- General Office Technology
- Hotel and Restaurant Management
- Industrial Management
- Marketing and Retailing
- Mountain Tech Lodge

Chestnut Maintenance Building
- Plant Operations Office
- Receiving

Dogwood Building
- Air Conditioning, Heating, and Refrigeration
- Automotive Mechanics
- Automotive Service Technician
- Carpentry and Cabinetmaking
- Diesel Vehicle Maintenance
- Electronic Servicing
- Machinist
- Tool, Die, and Mold Making
- Welding

Elm Building
- Civil Engineering Technology
- Electronics Engineering Technology
- English
- Mathematics
- Drafting and Design Engineering Technology
- Mechanical Engineering Technology
- Physics
- Surveying Technology
- Tool Design Technology

Hemlock Building
- Early Childhood Associate
- Emergency Medical Science
- Focused Industrial Training
- Law Enforcement Technology
- Medical Laboratory Technology
- Phlebotomy
- Total Quality Program
- Security Office

Holly Learning Resources Center
- Audio-Visuals
- Library

Ivy Building
- Continuing Education Classes
- Painting and Decorating

Laurel Building
- Auditorium
- Guided Studies
- Humanities

Madonna
- Leased to Religious of Christian Education

Magnolia Building
- Continuing Education Classes
- Human Resources Development Programs

Maple Building
- Continuing Education Classes
- New Industry Training

Oak Gym/Student Center
- Athletics
- Bookstore
- Physical Education
- Snack Bar
- Student Government Association
- Veterans Representative

Poplar
- Child Care Center

Rhododendron Building
- Associate Degree Nursing
- Biology
- Dental Assisting
- Dental Hygiene
- Practical Nursing
- Radiologic Technology

Smith-McDowell
- Museum of WNC History
- Leased to WNC Historical Association

The Pines
- Continuing Education Administrative Offices
- ABE PLATO Lab
- Compensatory Education
- Microcomputer Laboratory
- Small Business Center

Madison Campus

The Madison Campus of Asheville-Buncombe Technical Community College is located on the Marshall Bypass in Marshall, North Carolina. Both credit and continuing education classes are offered day and evening.

Liston B. Ramsey
- Administrative Offices
- Auditorium
- Classrooms
- Computer Lab
- Conference Room
- Shop

Dramatic covered walkway connects Dogwood and Birch buildings.

ORGANIZATION

HISTORY

Asheville-Buncombe Technical Community College has served as the community's premier technical educator for over thirty years. Originally funded by a bond election, the institution was established on September 1, 1959, and named the Asheville Industrial Education Center.

Following legislation creating the North Carolina System of Community Colleges that was enacted in 1963 by the General Assembly, the name was changed on January 27, 1964, to Asheville-Buncombe Technical Institute. This legislation enabled the College to confer the Associate in Applied Science degree for the first time at graduation ceremonies in August, 1964.

The Board of Trustees approved a third name change to Asheville-Buncombe Technical College on August 6, 1979.

A final name changed occurred on November 2, 1987, when the Board of Trustees approved Asheville-Buncombe Technical Community College, an action which became official when endorsed by the Buncombe County Commissioners on November 3, 1987.

In October 1988 the College received approval to offer Associate degree programs and in September 1989 enrolled its first class for the Associate in Science degree. The Associate in Arts degree was offered for the first time during Summer Quarter 1990-91.

On January 18, 1990, A-B Tech officially opened a satellite campus in Madison County. The College had served the county out of temporary quarters at the Marshall Elementary School since December 12, 1984.

In the early years, the College administered the operation of four units located throughout western North Carolina. These units have gained independent status and are now fully accredited community colleges.

ADMINISTRATION

The College was initially administered by the Asheville City School Board of Education. Following the establishment of the North Carolina System of Community Colleges, control passed to an independent board of trustees.

From the beginning, prominent Asheville and Buncombe County business and community leaders have helped to guide the College. In addition, each department has an advisory committee made up of local practitioners. All together several hundred local citizens provide guidance for the educational programs of the College.

CURRICULA

The first program offered by the College was Practical Nursing. Electronics Engineering Technology and the Machinist programs were started in 1960. These three curricula are still offered along with 40 other career and college transfer programs.

The College offers the Associate in Science, the Associate in Arts, and the Associate in Applied Science degrees, technical diplomas, diplomas, and certificates.

The Associate in Science and Associate in Arts degree programs are offered in the Division of Arts and Sciences. All career curricula and courses are offered through three divisions: Allied Health and Public Services Education, Business and Hospitality Education, and Engineering and Applied Technology. In addition, noncredit academic, avocational, practical skills, and occupational classes and activities are offered through the Continuing Education Division.

Continuing Education courses are generally offered , with sufficient enrollment, on demand. Curriculum courses are usually offered on planned schedules in both the day and evening/weekend programs. Many curriculum classes are also offered in *clusters* for *unclassified* students. Some Continuing Education courses--including Adult Basic Education, Human Resources Development, New and Expanding Industry Training, Small Business Center, Total Quality Management, and Focused Industrial Training activities--are ongoing or are repeated on a regular basis.

Both curriculum and Continuing Education programs are supported through the activities of the GED Testing program, Guided Studies, and the Learning Resources Center.

Classes meet on campus and at various off-campus sites. Course requirements are the same without regard to meeting times or locations.

CAMPUS FACILITIES

On March 15, 1961, the Industrial Education Center moved into two newly constructed buildings off Victoria Road. Over the years the Board of Trustees has acquired land that today totals 126.76 acres.

Twenty-one buildings house academic programs and campus services. Included in this total is the Smith-McDowell House, the oldest brick house in Buncombe County, leased to the Western North Carolina Historical Association.

On January 18, 1990, the College established a campus in Madison County . The satellite operation provides adult education, upgrading, and college credit courses for the people of Madison County.

Over the years a combination of special funding has provided for campus expansion. Since 1985 the North Carolina General Assembly has approved $5 million in special legislation for campus construction.

On September 22, 1987, Buncombe County voters approved a $6 million bond referendum that was used for campus additions and renovations.

Using $1.6 million of bond funds, Buncombe County Commissioners purchased for A-B Tech property belonging to St. Genevieve Gibbons Hall, a private school that merged with Asheville Country Day School to form the Carolina Day School. Commissioners gave title to the Board of Trustees on September 23, 1987. A total of 12.77 acres and four buildings were acquired in the transaction.

On October 21, 1987, A-B Tech in cooperation with Buncombe Child Development opened a Child Care Center, which offers both day and evening service to students and faculty.

CURRENT STATUS

Asheville-Buncombe Technical Community College with strong local support has grown in facilities and land acquisition, in enrollment, in curricula, and in expanded services to the community until today the College has the largest headcount enrollment of any institute of higher education in western North Carolina.

LOCATION

The main campus is located off Victoria Road in Asheville, North Carolina, a city repeatedly named as one of the most livable towns in America.

Situated near major interstates and on local bus routes, the College is convenient to the citizens it serves. Ample parking close to class buildings is provided free on campus.

The Madison County Center is located in Marshall, North Carolina.

COLLEGE MISSION STATEMENT

Asheville-Buncombe Technical Community College, established in 1959, is a public, two-year college committed to preparing students for employment, further education, and development of responsible attitudes needed in modern society. The College commitment is to provide quality educational opportunities that encourage students to attain their individual, academic, and career goals. The College strives to fulfill this commitment through continuous improvement of programs, employees, and support services.

As a member of the North Carolina Community College system, the College is dedicated to serving Western North Carolina, primarily Buncombe and Madison counties, in the role of a comprehensive community college where the doors are open to all adults who desire to continue their education. Programs and services are available to meet students at their ability levels and to assist them in attaining realistic educational goals.

In support of these commitments, Asheville-Buncombe Technical Community College offers:

* courses to provide marketable skills to prepare students for employment in business, the technologies, the skilled trades, and health-related careers.
* the first two years of study for those seeking transfer to a four-year college or university.
* opportunities for life-long learning to enhance personal, social cultural, and recreational life.
* training in basic skills to improve literacy and general education to assist students in obtaining their high school credentials.
* programs for students who need to develop basic academic skills for post-secondary study.
* upgrading of skills for those currently employed in fields experiencing advances in technology.
* counseling services for personal, academic, and career guidance; and other support services such as financial aid, on-campus child care, tutoring, and reasonable accommodations for students with special physical and learning needs.
* upgrading human relations skills at all organizational levels.
* assistance with economic development of the community, region, and state directly and indirectly through the education and training of current and potential employees through technical assistance to individuals, businesses, industries, and public and private service agencies.

ABTCC and its Board of Trustees, through its administrators, further support its mission by employing and developing qualified instructional and support staff, acquiring and maintaining the resources necessary for its programs, ensuring financial accountability, providing public information, assuring equality of access without discrimination, involving college personnel and students in decision-making processes, and by coordinating its programs and offerings with other educational institutions. College development is attained through a dynamic planning process based on sound investigation and research by involved administration, faculty, staff, and students.

PHILOSOPHY

Asheville-Buncombe Technical Community College exists to serve the students. The College's commitment includes recognizing the individual worth of all students, accepting them at the level we find them, and assisting them to attain realistic objectives. The College subscribes to the belief that those who are affected by decisions should be involved in the process itself and consequently strives to involve students, faculty, staff, and community in the formulation of policies and practices.

In order to assure everyone an equal opportunity to learn and improve skills, and to develop social abilities and responsible attitudes, our doors are open to anyone of appropriate age who can profit from our programs. Inherently involved in the concept of the open door policy and the formulation of realistic goals are the processes of guidance and counseling. The College believes that adequate guidance and counseling services should be readily available to every applicant and should continue throughout the student's educational career.

Asheville-Buncombe Technical Community College serves an essential role in regional economic development. The College is concerned with providing an educated citizenry. Accordingly, the College strives to maintain flexible programs of instruction that are continuously responsive to the needs of students as well as the changing needs of present and prospective employers.

The College promotes excellence in teaching by supporting creative, critical, and independent inquiry, high standards for knowledge acquisition, and the achievement of intellectual understanding, freedom from restraints due to ignorance, prejudice and intolerance, and an understanding of the relationships of the individual to society. The implications of academic freedom include teaching and publishing, unhindered by others.

We are committed to the maximum utilization of our resources and the greatest possible efficiency in their use. To this end, many curriculum and special courses are offered during evening hours, or by special arrangement. We also believe that self-evaluation and dynamic program review provide the most effective base for responsible decision-making. Periodic reviews are built into our programs at every level necessary to provide an education that is flexible, progressive, and sensitive to the changing needs of our clientele.

DIVISIONAL OBJECTIVES

ALLIED HEALTH AND PUBLIC SERVICE

The Allied Health and Public Service Education Division provides students with opportunities at the postsecondary level to acquire knowledge, skills, and attitudes that will enable them to become effective and safe members of health care and public service teams.

BUSINESS AND HOSPITALITY EDUCATION

The objective of the Business and Hospitality Education Division is to provide practical dynamic college-level business and hospitality training with emphasis on the development of desirable professional attitudes.

CONTINUING EDUCATION

Continuing Education will provide vocational education opportunities for the unemployed, upgrading courses for those already employed, adult basic education for those desiring a higher educational level, and certain avocational courses for individual enrichment.

ENGINEERING AND APPLIED TECHNOLOGY

The Engineering and Applied Technology Division offers a variety of Associate in Applied Science degree programs in engineering technologies and diploma programs in applied technologies. Degree-level students are provided an appropriate blend of engineering, scientific, and mathematical theories with applications. Diploma-level students are provided training that is closely related to the industrial work environments. Appropriate related and general education courses are provided in support of these programs.

ARTS AND SCIENCES

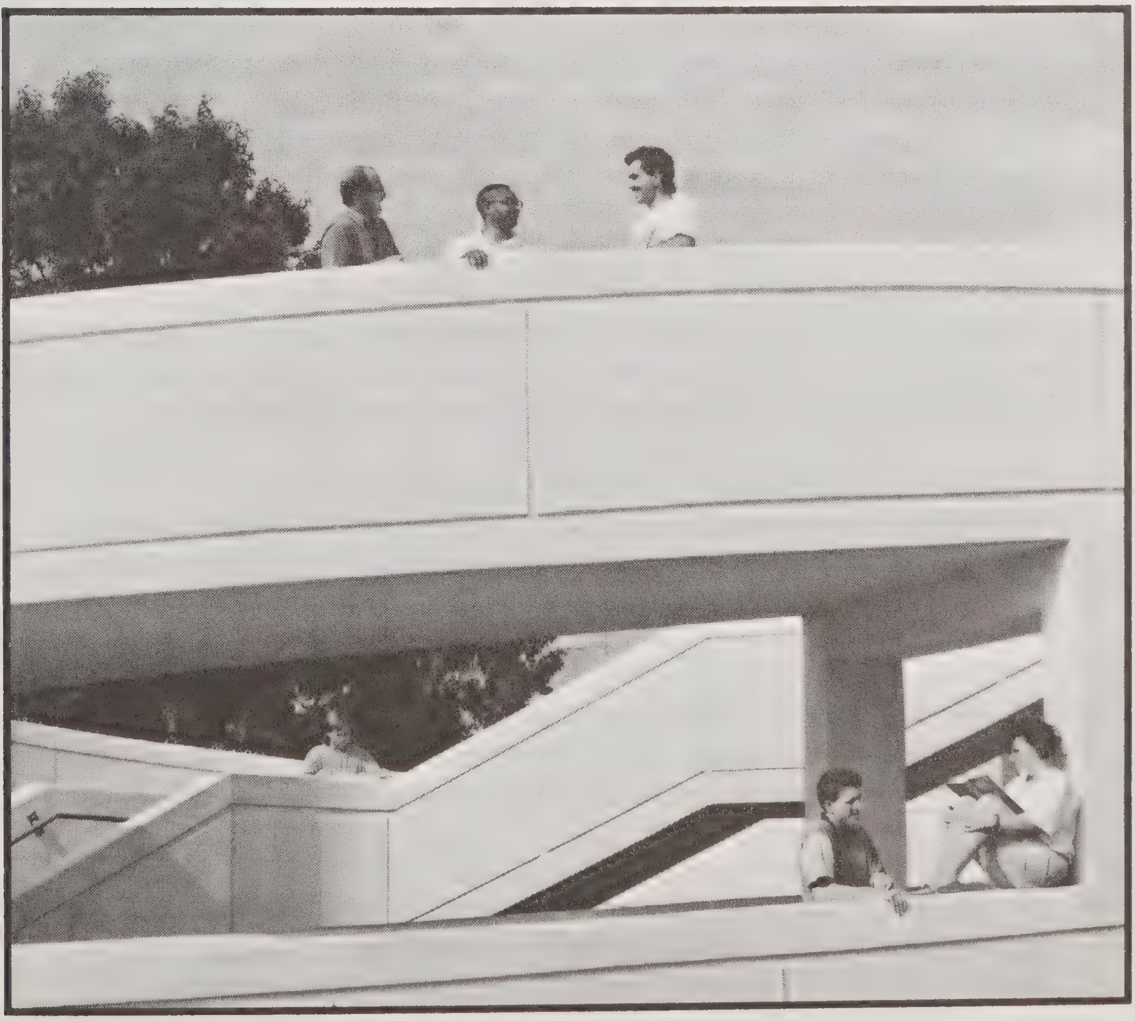
The Arts and Sciences Division contributes to the growth of students for productive involvement and participation in a technological society by providing essential postsecondary communicative and quantitative skills as well as an understanding of human relations and the human environment. The division offers the core courses and provides coordination for the College Transfer programs.

LEARNING RESOURCES CENTER

The mission of the Learning Resources Center is to support the instructional program of the college through the provision of adequate, up-to-date resource collections and instruction in their use, audiovisual services, and education materials to promote life-long learning.

Objectives

1. To assume an integral support role in fulfilling the mission of the College.
2. To provide library services designed to support and enrich College instructional programs.
3. To provide audiovisual services to the faculty, staff, and student of the College. These services will include production, materials, and equipment to support the instructional program and related activities. Telecommunications and satellite reception will be provided for seminars and conferences.
4. To provide a learning environment in which the student can be free to explore interests, with a learning pace and manner specifically tailored to individual needs.
5. To provide for the special academic needs of disabled students.
6. To support community needs for instructional and resource materials and services consistent with the mission of the college.



Pedestrian bridge spans Victoria Road.

NONDISCRIMINATION POLICY

Asheville-Buncombe Technical Community College does not discriminate on the basis of sex, race, ethnic origin, age, disability, or religion, in the educational programs or activities which it operates. The College is required by Title IX of the Education Amendment of 1972 not to discriminate on the basis of sex, and other Federal legislation not to discriminate on the basis of race, ethnic origin, age, disability, or religion. The requirement not to discriminate in education programs and activities extends to employment in the College and to admission into its programs. Inquiries or complaints concerning the application of Title IX and other Federal nondiscrimination legislation to Asheville-Buncombe Technical Community College should be referred to:

Personnel Officer
Asheville-Buncombe Technical Community College
340 Victoria Road
Asheville, North Carolina 28801
Thomas W. Simpson Administration Building
Telephone: (704) 254-1921

STUDENT DUE PROCESS PROCEDURE

Below is a *summary* of the Student Due Process Procedure. Upon request, a copy of the complete procedure and pertinent explanations will be furnished by the Personnel Officer.

I. PURPOSE: To provide a system whereby a student may appeal decisions which are felt to be unjustified or a violation of his or her rights. This procedure is not intended to eliminate efforts by the student to resolve problems through discussions with instructors, department chairpersons, division directors, or other staff members. Rather, it is intended that review action by the Student Due Process Appeals Committee should be used only after other methods have been attempted.

II. CONDITIONS NECESSITATING THE USE OF THE APPEALS PROCEDURE: Areas for appeal include, but are not limited to, disciplinary actions, teaching methods, relevancy of materials, grades, participation in College-sponsored activities, and absence excuse practices.

III. GENERAL PROVISIONS: Under no circumstances will a student requesting due process be harassed, intimidated, or be discouraged from following or denied access to the STUDENT DUE PROCESS PROCEDURE. The Personnel Officer shall ensure that the procedure is promptly and correctly followed by all parties.

The following offices shall supply copies of the appeal form to any student requesting them: Personnel Officer; Student Services; Assistant Vice President, Instructional Services; Student Government Association; and Division secretaries.

IV. APPEAL PROCEDURE: ACADEMIC PROBLEMS--The student is strongly encouraged to first discuss the problem with the instructor involved. If the students feels intimidated by the instructor or feels that such discussion has little or no chance of resolving the problem, the student may first discuss the problem with the Personnel Officer. The Personnel Officer shall schedule a joint conference with the student, the instructor, and the Personnel Officer present. If the problem is not resolved at this point, the instructor shall inform the student of the appeal procedure that must be initiated within five (5) class days of the time the student is informed of the procedure.

The appropriate line of authority is as follows:

a. Instructor (not a Department Chairperson or Division Director)
|
Department Chairperson
|
Division Director
|
Appeals Committee

b. Instructor (is the Department Chairperson, but not Division Director)
|
Division Director
|
Appeals Committee

c. Instructor (is the Division Director, but not the Department Chairperson)
|
Department Chairperson
|
Appeals Committee

d. Instructor (is both the Department Chairperson and Division Director)
|
Vice-President, Instructional Services or Assistant Vice President, Instructional Services (if evening student)
|
Appeals Committee

Evening students may confer with the Assistant Vice President, Instructional Services, when unable to immediately contact the Department Chairperson, Division Director, or the Personnel Officer.

Students wishing to appeal disciplinary or other non-academic problems involving instructional or non-instructional staff should request a copy of the STUDENT DUE PROCESS PROCEDURE from the Personnel Officer.

Continuing Education

The concept of lifelong learning is implemented through continuing education classes at Asheville-Buncombe Technical Community College. These classes carry no credit toward a degree or diploma. They vary in length and are held wherever there is available space and a sufficient number of students. Individuals sixteen and seventeen years old may register for continuing education classes provided they have special permission and do not displace any interested adult.

Usually, the only cost of these courses is a nominal registration fee. In some courses, there is a charge for textbooks or materials. North Carolina residents 65 years of age and older are exempted from the registration fee.

Classes are divided into four general areas:

ACADEMIC: Languages, economics, sociology, psychology, etc.
AVOCATIONAL: Ceramics, general crafts, photography, etc.
PRACTICAL SKILLS: Sewing, cooking, floral design, mechanics, etc.
OCCUPATIONAL: Business courses, food service, fire service training, law enforcement, health occupations, electricity, insurance, etc.

Special classes are provided for mentally retarded adults under the Compensatory Education program.

CONTINUING EDUCATION COURSE REPETITION

An individual course may not be taken for more than two (2) consecutive terms without a break of at least one term. Students who are enrolled in ABE, GED, or Compensatory Education classes may continue in them as long as reasonable educational and/or social progress is being made according to the goals of the program. Students in Compensatory Education classes will be reviewed after no more than two years to determine whether they will continue in the program.

The College reserves the right to modify this policy in general or relative to a given course as necessary to meet the needs of the College and its students.

ADULT BASIC EDUCATION AND GED PREPARATION

The Adult Basic Education (ABE) program is designed for adults who are functioning at or below the Ninth-grade educational level. The program assists adults with the necessary skills to raise their functional academic level, to cope in contemporary society, and to increase their employment opportunities. Free classes offer the opportunity to study basic reading and writing, English, mathematics, social studies, and science, and English as a second language.

The GED program offers instruction in five subject areas that prepare individuals to take the high school diploma equivalency (GED) test.

Classes usually meet twice a week. A person may enroll at any time. Additional classes can be started in almost any location, including work sites, whenever there is a sufficient number of interested adults.

All materials are designed for adults with emphasis on individual needs and interests. In GED preparation classes, students may pay a nominal book fee. At all levels, instruction is closely related to helping the student function better in today's society.

FOCUSED INDUSTRIAL TRAINING

A Focused Industrial Training program is operated by A-B Tech with a grant from the Department of Community Colleges.

The program provides assessment of training needs and customizes educational programs for skilled and semi-skilled workers employed in industrial occupations and trades. The purpose of the program is to provide training resources to small groups from industry that are not served through other college programs.

HUMAN RESOURCES DEVELOPMENT

The Human Resources Development Program (HRD) is a unified and intensive effort to recruit, train, and place in employment the long-term unemployed and underemployed adults of North Carolina. Since 1973, the program has been one of several offered under the auspices of the Department of Community Colleges with special funding by the North Carolina General Assembly.

HRD is located in the Magnolia Building on the Asheville-Buncombe Technical Community College campus. HRD classes range from two to eight weeks in length. Program instruction is designed to meet individual time needs and can range from a 15 to 30 hour weekly schedule. A career development staff assists the students with career assessment, short-term vocational training, basic skills education, and job preparation activities. Upon completion, students are offered job placement assistance.

Under federal guidelines, some students may be eligible for the needs based payment allowance through the Jobs Training Partnership Act (JTPA).

Applications may be made daily at the Magnolia Building on campus during regular school hours.

NEW AND EXPANDING INDUSTRY TRAINING

The Industry Services Division of the Community College System trains a skilled work force for a new or expanding industry. North Carolina was the first state in the Southeast to establish a planned system of industrial training, and A-B Tech was one of the first community colleges to offer this program.

Because it is a customized service based on the unique requirements of a particular company, A-B Tech can provide training for any industrial job that can be defined and arranged into a logical learning sequence. The final training program design is the result of joint study, planning, and implementation by company representatives, industrial training specialists, and A-B Tech personnel.

SMALL BUSINESS CENTER

A Small Business Center is located on the campus of Asheville-Buncombe Technical Community College. Services of the Center are free to small business owners and prospective entrepreneurs.

The Center regularly schedules workshops around issues confronting the local small business community. Consultation on business problems and access to a business resource library are other free services available.

The Center is open Monday through Friday from 8:30 a.m. to 4:30 p.m. Contact the Center director for additional information, 254-1921, ext. 128.

TOTAL QUALITY PROGRAM

The Total Quality Program provides training and technical assistance in total quality practices for businesses, industries, and public and private sector agencies. The program offers individual consulting, on-site customized training, short courses, and seminars on quality related topics. The program is also a resource center for quality information and maintains a book and video lending library.

Madison Campus has a special landing area for the Memorial Mission Air Medical Ambulance.

Educational Support Services

GUIDED STUDIES

This department provides postsecondary students with instruction in basic math, English, and college success skills in both structured and unstructured settings.

A tutorial component serves curriculum students needing assistance outside of class in math or English related subjects. Tutoring is accomplished through individual sessions, small groups, and computer-assisted instruction.

As the point of entry for learners needing academic development, Guided Studies is sensitive to the needs of students making a transition to a college environment. Instructors design course work to accommodate first-time college students, those returning to school after an absence, and those with disabilities. The objective of this department is to enable students to develop the skills and behaviors that will lead to successful achievement in A-B Tech's curricula.

Guided Studies courses are listed in the quarterly class schedules. Current lab schedules can be obtained from Guided Studies personnel.

LEARNING RESOURCES CENTER

The Learning Resources Center (LRC) includes: the Library, and Audiovisual Services. Together, they provide information, guidance, and instruction in a wide range of resource material. In addition, the LRC provides a variety of A-V equipment to supplement classroom, laboratory, and shop experiences.

THE LIBRARY

The library makes available all of the LRC's collection of materials, both print and nonprint formats. The collection is well organized for easy use and automated catalogs, circulation, electronic indexes, and reference services provide the user with state-of-the-art access to research and recreational materials. The primary objective of the library is to provide information services and assist the user with utilization of the collection in an attractive, well-equipped facility that is open to the college and the community.

HOURS:	Monday-Thursday	8:00 a.m.-10:00 p.m.	Closed Weekends
	Friday	8:00 a.m.-4:30 p.m.	

AUDIO-VISUAL SERVICES

Audiovisual services are available to the College faculty, staff, and students. These services include production, materials, and equipment to support the instructional program and related activities, including satellite reception for seminars and teleconferences. The LRC maintains an inventory of audiovisual equipment to support College sponsored activities, along with an extensive collection of audiovisual materials. Computers are available for student use.

HIGH SCHOOL DIPLOMA EQUIVALENCY
(GED Test)

An adult who has not completed high school may take the Tests of General Educational Development (GED). Upon attaining a passing score of 225 points with no single test score below 35, a High School Diploma Equivalency will be awarded. This certificate is generally accepted on a basis equal to a high school diploma for employment, promotion, or further education.

The GED test covers five broad areas: Writing Skills, Mathematics, Social Studies, Science, and Interpreting Literature and the Arts.

The following requirements must be met before taking the GED tests:

1. Minimum age: 18 (16- and 17-year olds may take the GED test with special permission).
2. Residence: current North Carolina resident.
3. Make application for tests on official forms.
4. Cost: There is a $7.50 fee to take the GED test. Retests in the Writing Skills Essay cost $2.50 per test.
5. Make an appointment by calling A-B Tech, 254-1921, extension 132.

GENERAL ADMISSION REQUIREMENTS AND PROCEDURES

Asheville-Buncombe Technical Community College has an OPEN DOOR admission policy. High school graduation or equivalence is normally required for admission to any curriculum; however, there are also programs for nongraduates 18 years of age or older. The College begins accepting applications on September 15, and early application is advised for many programs. Admission to some curricula is competitive among qualified applicants according to established criteria.

Individually selected classes may be taken by *unclassified* students, providing the prerequisites have been met and space is available. Students completing 30 hours as an *unclassified* student will be assigned an academic advisor before registering for additional courses.

Placement into a specific course of study is based upon standards which will help to assure the applicant's success in that course of study. Those who do not yet possess the background required by the course of study of their choice may be enrolled in preparatory courses designed to provide this background.

Educational background, interest, motivation, experience, and aptitudes will be considered when an application is submitted to the College.

Persons wishing to enroll in a curriculum program at the College must complete the entire application process and meet requirements as follows:

1. Submit an application form.
2. Obtain transcripts of credits from all secondary and postsecondary schools attended. Records should show that the student is a high school graduate or has a state approved equivalent education.
3. Complete the battery of placement tests administered by the College. In the case of Allied Health programs, the placement tests are used to determine admissibility. Student suitability for admission to individual programs will be determined by scores on the tests and specific program requirements.

(See programs for details.) Requests for test exemption by transfer or unclassified students will be reviewed individually.

4. Have a personal interview with the Student Services staff. A meeting with a representative of the major department may also be required.
5. Be in good health with no impairment of vision or other physical defect which would restrict ability in a particular field of work. A complete physical examination may be required.

Upon receipt of the completed application form, the applicant will select a placement testing date.

Upon completion of the above procedure, each applicant will receive notification of the action taken.

COUNSELING AND TESTING

Generally, testing will be completed prior to acceptance and registration. A counselor will schedule interviews with students concerning interpretation of their test scores and will advise students concerning course selections. Additional aptitude tests may be desirable to determine individual ability.

Students are encouraged to use the counseling services at any time. Counseling will work at all times with individuals to keep them informed of the progress they are making. Also, many reference materials and computerized programs are made available to students during the program through the counseling services.

ACADEMIC ADVISING

In order to ensure that every student receives quality academic advising, Asheville-Buncombe Technical Community College has established an academic advising system. The students who are admitted to a curriculum are advised by a faculty member from that curriculum. Unclassified and provisional students are advised by counselors from the Student Services division. In all instances, a student's registration form must be signed by an appropriate advisor indicating that the schedule meets appropriate academic needs. No student will be allowed register without an advisor's signature.

PROVISIONAL STUDENT STATUS

Provisional status accommodates those students who can benefit from the academic programs offered by the College but require additional developmental (guided studies) coursework to be successful in their chosen program. Any student seeking a diploma, degree, or certificate in a noncompetitive program of study may be eligible for provisional student status.

The determination of provisional status shall be dependent upon the results of diagnostic testing and the professional judgment of the Student Services counselor to whom the student is assigned. The counselor will assist the student in developing a Plan of Individual Education (PIE) tailored to meet the student's academic needs. The PIE will document the developmental (guided studies) coursework required of the student and any additional courses determined by the faculty advisor. A copy of the PIE will be filed in the student's permanent record.

Provisional students are generally permitted to register concurrently for developmental (guided studies) courses and required courses in their program of study;

however, it is recommended that the course schedule for any academic term not exceed 15 credit hours. Developmental (guided studies) courses must be taken beginning with the student's first quarter of enrollment and all such coursework must be completed within twelve (12) months thereafter.

For more information about Provisional Student Status, students are encouraged to contact the Student Services Department.

TRANSFER CREDIT
(Transcript Evaluation)

CREDIT FROM OTHER INSTITUTIONS: Asheville-Buncombe Technical Community College will accept credit for parallel work completed in other postsecondary institutions accredited by a regional accrediting agency. Applicants who seek admission with advanced standing should make regular application and obtain from the Admissions Office a *Request for Transfer Credit* form for the evaluation of all postsecondary work. *PLEASE NOTE: TRANSCRIPTS WILL NOT BE EVALUATED UNTIL THIS FORM HAS BEEN COMPLETED.* No credit will be granted for work below a "C" or the average grade given by the other institution. Transfer credit will be awarded for course work without grades or quality points. Proficiency credits from other institutions will not be accepted. At least half of the credit hours in a program of study must be received by taking courses and/or proficiency examinations at A-B Tech. If any course is taken for credit after transfer credit has been awarded, and a grade of A, B, C, D, or F is earned, it will replace the transfer credit and become the official grade for the course.

INTERNAL TRANSFER OF CREDIT: Students who graduate and return, change majors, or return from suspension will have their former A-B Tech work evaluated as follows (if a Request for Transfer Credit form is completed):

1. Graduates of A-B Tech who return to the College for another program will have their former work evaluated as an internal transfer.
2. Nongraduates who change programs for the first time will have their transcripts evaluated. Transcripts of unclassified students will be evaluated at the time they declare a major.
3. Nongraduates returning to continue their program of study will not have their transcripts evaluated.
4. **All courses with passing grades applicable to the requirements of the new program, according to the current catalog, will be transferred or carried forward with existing grades.**
5. The initial grade point average will be determined by the courses and corresponding grades applied toward the current major.
6. This process will be completed during the first quarter of reenrollment.
7. Exceptions to any of the above procedures must have the approval of the Assistant Vice President, Instructional Services.

TRANSFER OF CREDIT TO OTHER INSTITUTIONS: Asheville-Buncombe Technical Community College provides a very distinct option at the end of its two-year Associate in Applied Science degree programs. Graduates have the option of entering a career, continuing their education at a senior institution, or doing both. We are proud of the fact that our graduates have a marketable job skill after two years of study and can also complete a four-year degree after two more years of academic work.

Students who attend most senior institutions do not declare a major until their junior year. Our programs are such that those students who earn a baccalaureate degree pursue it in an inverted pattern. The majority of the student's academic major is earned at A-B Tech in the first two years of study. As junior level students at the senior institution, they take general university requirements and may take more advanced courses relating to their major.

Parallel work completed at A-B Tech will transfer to other institutions in the North Carolina Community College System and to most senior institutions in the region. The college has formal transfer agreements and understandings with many senior institutions in Western North Carolina and beyond. Most public and private four-year institutions in North Carolina, and many that are out of state, regularly accept credits from A-B Tech and generally enroll the graduates at approximately the junior level. The details of these affiliations are available from the transfer counselor in the Student Services office and the individual senior institutions.

A-B Tech strongly encourages its graduates to continue their formal educations after completion of their A-B Tech programs. It is important that graduates recognize the need to continue their education throughout life to prepare for new and changing careers.

CREDIT BY EXAMINATION

(Proficiency Examination)

Students who can provide tangible evidence of preparation to challenge a course, such as a transcript of similar college level credits, record of military study, certification or license, standardized test scores including CLEP, or written statements from employers regarding training or directly related work experience indicating that they may be proficient in a subject, may request credit by examination. A written request must be made to the proper Department Chairperson on a form obtained from the Registrar. This test must be administered immediately after the 20 percent point in the quarter.

Credit by Examination will be comprehensive and approved by the supervisor of the instructor administering the exam. The examination may be oral, performance, written, or a combination of these methods. To receive credit by examination, the score must be above average (B). The decision of the examining instructor will be final. No quality points will be awarded for credit by examination.

No student may request a second test for Credit by Examination in the same course or request Credit by Examination in a course after receiving *any* recorded grade for that course. Exceptions must have approval of the Assistant Vice President for Instruction.

Because of specific requirements, credit for certain courses may not be received through Credit by Examination. The courses which may not be challenged by examination are marked with an asterisk in the course description section of the catalog. Most institutions will not accept proficiency credits for transfer.

The following procedure must be used by students who request Credit by Examination:

1. Enroll as a credit student in the course to be challenged and pay tuition if enrolled on part-time basis. There is no extra charge for full-time students.
2. Present evidence of proficiency, complete the written request form, and have the request approved within the first ten (10) days of the quarter.

3. Remain enrolled and attend class until the examination is administered. During this period, students who have written approval for the exam may attend class without purchasing textbooks and materials. If books are purchased and returned for refund, they must be in new condition.
4. Students who are very confident of passing the exam may choose to begin with a course overload.
5. Students who perform on the exam at a level sufficient to get credit may leave the course and have an indication of Proficiency Credit by Examination (P) posted to their record for the course. Receiving proficiency credit does not entitle the student to a tuition refund.
6. Students who do not receive credit by examination are encouraged to purchase textbooks and materials and remain in the class to earn a credit at the end of the quarter.
7. Students who receive financial assistance of any type are required to inform the director of their assistance program that they are seeking proficiency credit. Assistance may be reduced and reimbursement will be required if the course load is reduced by receiving credit by examination. Students may choose to overload in this case.

Any exceptions to these procedures must have prior written approval by the Assistant Vice President for Instruction and the appropriate Division Dean and Department Chairperson.

AUDITING COURSES

Students who wish to audit courses must register through regular registration procedures and must have approval of the department chairperson responsible for the particular course. Audit students do not receive credit but **must adhere to attendance regulations**. An audit intention cannot be changed to credit after the fifth class day, nor can credit courses be changed to audit courses. Audit work cannot be used toward diploma or degree requirements. (Audit students will enter class after all curriculum students have been registered, precluding audit students from taking the place of curriculum students). Physical education courses may not be audited.

BALANCING CLASS SIZE

Each student will be assigned a sequential number for each curriculum class by the computer as fees are paid. This number will determine position in the class should the class need to be split. The position determines the priority of the student to remain in the class. The College reserves the right to split classes and assign students to alternate sections whenever necessary to balance class size.

CURRICULUM COURSE REPETITION

Students who need a course to graduate may take the course as many times as necessary to pass it, providing space is available. Any course that has been passed or audited may not be taken for credit or audited more than twice per academic year subject to space being available after preregistration. The twice-per-year regulation also applies to single or elective courses that are not required for graduation. Physical education courses may not be audited. No single physical education course may be attempted more than twice.

TUITION AND EXPENSES

NORTH CAROLINA RESIDENCY

In order to qualify for the resident tuition rate, North Carolina law (G.S. 116-143.1) requires that *a legal resident* must have maintained his domicile in North Carolina for at *least the twelve months immediately prior* to his classification as a resident for tuition purposes.

One must also have accomplished many of the things normally done by one who intends to reside in a state permanently. Examples of these actions are being employed, paying taxes, having a current North Carolina driver's license, voting in the state, belonging to churches, clubs or other organizations. Anyone having a question regarding resident status should contact Student Services.

TUITION*

N.C. residents per quarter	$185.50
Nonresident of N.C (14 or more credit hours)	$1,505.00
Part-time N.C. residents per credit hour per quarter	$13.25
Nonresident of N.C. per credit hour per quarter (fewer than 14 credit hours)	$107.50
LATE REGISTRATION FEE	$10.00

North Carolina residents 65 years of age and older are exempted from the payment of curriculum tuition and registration fees for classes in Continuing Education.

** Tuition is subject to change.*

STUDENT ACTIVITY FEES

A student activity fee will be charged all day curriculum students enrolled in nine or more credit hours on the following basis:

Fall Quarter	$6.00
Winter Quarter	$6.00
Spring Quarter	$6.00

Evening and special schedule students (those enrolled for fewer than nine credit hours) may participate in activities by paying an admission fee established for each event.

STUDENT INSURANCE

Certain risks are inherent in any work involving regular contact with mechanical and electrical equipment. While stringent precautions will be taken to insure safety, it is felt to be in the interest of all students to provide some measure of insurance protection.

A group policy, providing the desired insurance protection, will be maintained in effect by the College and all students will be REQUIRED to subscribe to such coverage. The cost of accident insurance to the student will be approximately $1.00-1.50 per quarter.

REFUND POLICY

A person who registers for a class, pays tuition and fees, and never attends a class must complete an official withdrawal form and return it to the Registrar's Office within the first ten calendar days after the first day of classes as published in official college publications in order to be entitled to a refund of tuition. Student activity and insurance fees are nonrefundable.

If the official withdrawal form is completed and returned to the Registrar's Office within the first ten calendar days after the first day of class as published in the school calendar and the person has attended any classes, he/she will be entitled to a refund of two-thirds of the tuition. Student activity and insurance fees are nonrefundable.

If the last day to officially withdraw falls on a weekend, the official withdrawal period will be extended to the first school day thereafter.

ADDITIONAL COSTS

A beginning student should be prepared to incur additional estimated expenses during the academic year (4 quarters) as follows:

ALLIED HEALTH AND PUBLIC SERVICES EDUCATION	
Books	$375-550
Supplies	$150-425
COLLEGE TRANSFER	
Books	$400-500
Supplies	$100-200
BUSINESS AND HOSPITALITY EDUCATION	
Books	$400-550
Supplies	$50-225
ENGINEERING AND APPLIED TECHNOLOGY	
Books	$375-550
Supplies	$120-650

Books and supplies costs vary from year-to-year by curriculum due to price changes, curriculum changes, and instructor preferences. For purposes of definition, the following items may be classified as supplies: pen, pencils, paper, notebooks, instruments, uniforms and shoes, rental of uniforms, safety equipment, hand tools, calculators, lab coats, membership dues, pins and caps. Students will incur most of the supply costs for their curriculum during the first quarter of study. Students are encouraged to consult with their department chairperson for actual costs of supplies for their curriculum.

Students should consult with their department chairperson or a member of the Math Department prior to the purchase of a calculator for use in class.

PARKING REGULATIONS

All students are required to register their vehicles and display parking permits. Copies of parking regulations are available in the Business Office.

STUDENT FINANCIAL AID

The purpose of the financial aid program at Asheville-Buncombe Technical Community College is to provide assistance to students who, without such aid, would be unable to attend the College. The program is committed to the philosophy that no eligible student should be denied access to a higher education because of a lack of financial resources.

An application for financial aid will gain consideration for grants-in-aid, loans, scholarships and student employment opportunities. In general, financial aid is awarded to students on the basis of need, academic potential, and future promise. In determining the student's need, it is assumed the student will help himself through summer jobs and part-time work while attending school, that the family will provide aid commensurate with its income and resources and that the student will avail himself of any other financial assistance which is available.

Students desiring financial aid for an academic year (September through August) are encouraged to apply early (January through March) to be given priority consideration for the funds available. Applications will be processed until all available funds are awarded.

Copies of all applications mentioned in the following procedure may be obtained from any high school guidance office, most college and university financial aid offices, or the A-B Tech Financial Aid Office.

APPLICATION PROCEDURE

All applicants desiring priority consideration for available financial aid funds **must** complete the numbered steps below.

1. Before applying for financial aid it is advisable that each applicant complete the first three (3) steps of the Admission Procedure. (See the Table of Contents for the General Admission Requirements and Procedures page reference.)
2. The applicant **must** complete and mail a free application for Federal Student Aid to: Federal Student Aid Programs, P.O. Box 4005, Iowa City, Iowa 52243.
3. When completing the application, the applicant **must** indicate that a copy be sent to Asheville-Buncombe Technical Community College, 340 Victoria Road, Asheville, NC 28801.

Following the processing of the application, the applicant will receive a Student Aid Report (SAR). The SAR **must** be forwarded by the applicant to the Financial Aid Office without delay.

Once the Student Aid Report is received by A-B Tech's Financial Aid Office, the applicant's financial need will be determined. Official notification of awards is made no earlier than June 1 prior to enrollment. Each award is contingent upon the availability of funds.

Students desiring additional information about the Financial Aid Program at ABTCC are urged to write or phone: Director of Financial Aid, Asheville-Buncombe Technical Community College, 340 Victoria Road, Asheville, NC 28801, 704/254-1921, extension 161.

SATISFACTORY PROGRESS STANDARDS FOR FINANCIAL AID

Introduction. The Higher Education Act of 1965, as amended by Congress in 1980, mandates institutions of higher education to establish minimum standards of "satisfactory progress" for students receiving financial aid. For the purpose of maintaining a consistent policy for all students receiving financial aid administered by the College's Financial Aid Office, these standards are applicable to all financial aid programs including all Federally sponsored Title IV programs.

Satisfactory Progress Defined. To initially receive or continue to receive financial aid, a student must demonstrate satisfactory progress as defined in the GENERAL INFORMATION section of the catalog and meet the following conditions: The maximum enrollment time frame for the curriculum must not be exceeded. The maximum enrollment time frame for this purpose is defined as the equivalent of twice the number of academic quarters, as outlined in the College catalog, required of full-time students to complete a curriculum.

Policies and Procedures. The specific policies and procedures to be used in applying the satisfactory progress standards are outlined below:

1. Satisfactory progress will be evaluated prior to each payment period on a quarterly basis. (Exception: For the Federal Stafford Loan, Federal Supplemental Loans for Students, and the Federal PLUS Loan Programs evaluation will be completed prior to certification of the loan application.)
2. Grades of "F", "I", "X", "U", "W", "P", and "Y" will not qualify as successful completion of credit hours attempted.
3. Repeated courses for which the student initially received a grade of "I", "X", "U", or "W" and was paid will not qualify for repayment. Likewise, courses repeated which were previously completed with an acceptable grade toward the College's graduation requirements will not qualify for repayment.
4. Transfer credits from other postsecondary institutions will not be used to determine satisfactory progress.
5. Courses taken, which are not required to meet the graduation requirements of the curriculum program for which a student is enrolled, do not qualify for payment nor do courses audited by a student for which they will receive a grade of "Y"..
6. A student who fails to demonstrate satisfactory progress as defined will forfeit all financial aid awarded and disbursements will be terminated.
7. The maximum enrollment time frame will be prorated for those students who enroll on a half-time or three-quarter time basis.

Appeal of Financial Aid Termination. To appeal financial aid termination a student must be able to demonstrate mitigating circumstances. The procedure for appeal is:

1. A student will indicate *in writing* to the Director of Financial Aid the reasons why he/she did not make satisfactory progress *and* why financial aid should not be terminated. Documentation to support the appeal is permitted.
2. The Director of Financial Aid will review the appeal to determine whether or not termination of aid is justified. The student will be advised of the decision in writing.

3. A student wishing to appeal the decision of the Director of Financial Aid, may do so, in writing, to the Student Financial Aid Committee, c/o the Financial Aid Office. Additional appeals may be made through the Student Due Process Procedure, then to the President, and finally to the Board of Trustees of the College; if deemed to be necessary by the student.

Reinstatement of Financial Aid Eligibility. Should a student have his/her financial aid eligibility terminated due to not meeting the satisfactory progress definition, termination will continue until the student enrolls for a subsequent academic term at his/her own expense and completes the term satisfying the satisfactory progress definition. Once the satisfactory progress definition is met eligibility is reinstated for the subsequent academic term. In addition, financial aid eligibility will immediately be reinstated for all appeals upheld.

VETERAN'S EDUCATIONAL BENEFITS

The Veteran's Services Officer will help incoming veterans evaluate their eligibility for benefits. The Veteran's Office is located in the Azalea Building Individuals applying for Veteran's Benefits must meet all entrance requirements and are required to meet the following academic standards as they progress through their programs.

SATISFACTORY PROGRESS STANDARDS FOR VETERANS AND OTHERS ENROLLED UNDER THE VETERAN'S PROGRAM

1. Students receiving veteran's benefits will be placed on academic probation if they fail to maintain the following quality point averages:

END OF QUARTER	MINIMUM CUMULATIVE QUALITY POINT AVERAGE
1	1.50
2	1.75
3 and thereafter	2.00

2. Students will be suspended from the program if their cumulative quality point average falls below:
   a. The minimum requirement indicated above at the end of one quarter on academic probation.
   b. 1.50 after attempting a minimum of 30 hours.

   This regulation also applies to students who have not declared a major.

   Students may appeal to the Student Affairs Committee for readmission. Appeals must be made in writing within two school days following notice of suspension. After receipt of the student's appeal, the Student Affairs Committee must meet and act within three school days.

3. Students placed on probation or suspension will be informed and counseled by the following means:
    a. Department chairperson informs the student of his/her academic status and counsels the student. This action is taken on the first day of classes of the next term.
    b. The Veteran's Coordinator notifies students in writing of his/her status.
    c. The student is counseled by Student Services.

CONDITIONS OF SUSPENSION

1. Suspension from the curriculum is for one quarter. This condition also applies to students who have not declared a major.
2. Suspended students will be permitted to take only Guided Studies develop mental work or repeat courses in which there has been unsatisfactory progress.
3. Students suspended from one curriculum may apply for another curriculum. Admissions requirements of the new curriculum must be met. Permission to enter the curriculum as well as to enroll in individual curriculum courses must be granted by the department chairperson of that program.

GENERAL INFORMATION

CLASS ATTENDANCE

(**Class** includes lecture, shop, lab, clinic, etc.)

Regular and punctual class attendance is expected of all students for them to achieve their potential in the curriculum they have chosen and to develop desirable personal traits necessary to obtain employment after graduation. **Instructors and the college will keep an accurate record of class attendance.** Students who anticipate absence or tardiness should contact the instructor in advance if possible.

Instructional time missed because of circumstances beyond control of the student is considered to be excused. Justifiable reasons are:

1. Personal illness
2. Illness or death in immediate family
3. Necessary employment, civil, or military responsibilities (with documentation)
4. Official representative or participant in approved college activities
5. Emergencies including inclement weather

It is the responsibility of the student to account for instructional time missed and to make arrangements for makeups within 24 hours of returning to class. The instructor will determine if the instructional time missed is excusable. If the time is excused, the student will be permitted to make up missed work to the extent possible. Because of the nature of some learning experiences, especially shops, labs, and clinics, it is difficult if not impossible to duplicate the work of the class. The faculty has no obligation to assist with makeup for work missed for unexcused reasons.

Instructional time missed is a serious deterrent to learning. A student is responsible for fulfilling the requirements of the course by attending all classes (including shops, labs, and clinics) and completing course assignments. To receive course credit, a student should attend a minimum of 80 percent of the contact hours of the class. Upon accumulating excused or unexcused absences exceeding a total of 20 percent of the course contact hours, the student may be dropped from the class with a grade of "F" at the discretion of the instructor. Being late for class is also a serious interruption of instruction. A tardy is defined as arriving late for class, leaving early, or being away from class without permission during class hours. Three tardies may constitute one absence.

EXAMPLES OF EXCESSIVE ABSENCES

Total Class Contact Hours	Excessive Hours Absence
33	7
44	9
55	11
66	13
77	15
Other Hours	Hrs. X 0.20 rounded

IT IS THE JOINT RESPONSIBILITY OF THE STUDENT AND FACULTY TO DISCUSS ATTENDANCE PATTERNS THAT ARE *APPROACHING* THE POINT WHERE A STUDENT MAY BE DROPPED FROM THE COURSE.

In some programs, absence or tardiness of an individual may be a major disruption to the performance of others in the class or an inconvenience to other organizations such as hospitals and clinics. In these programs, the faculty may require advanced notice of *any* absences.

The student has the right to appeal to the Student Due Process Appeals Committee for problems with this regulation.

In the event that an instructor is not in class and arrangements have not been made, the class is dismissed after ten minutes. A roll must be signed by the students present and turned in to the Department Chairperson, Division Dean, or Vice President, Instructional Services. Students enrolled in classes that meet for two or more hours and sign the roll and leave must report to the classroom at the beginning of the second class hour. In the event that the instructor is not present for the second hour, the students again sign the roll and leave. If the course is scheduled for more than two hours, students will not be required to report to the classroom after the second hour.

CODE OF STUDENT CONDUCT

Almost 5,000 students, faculty, and staff are part of the A-B Tech family. Every year hundreds of people graduate from the College, and hundreds of new freshmen take their places. To protect all these students and employees from the irresponsible actions of others, the College has adopted basic rules of student conduct.

Students who have been charged with a violation of these rules may be assigned consequences based upon the seriousness of the offense. A hearing will be conducted by the Vice President for Student Services.

Consequences for violations include verbal warnings, written warnings, disciplinary probations, particular consequences adapted to the violation, and suspensions. Any disciplinary decision rendered by the Vice President for Student Services may be appealed to the Student Due Process Appeals Committee.

Any student charged with a violation of the Code of Student Conduct will receive a written copy of the charges and an appointment for a hearing. Rights, as they pertain to the hearing, are listed elsewhere in this manual.

The following actions are specifically prohibited on this campus under the Code of Student Conduct:

1. Academic Dishonesty - You may not purposefully deceive any official of the College by cheating on any assignment, examination, or paper.
2. Alcoholic Beverages - You may not possess or use alcoholic beverages on campus. You may not be under the influence of alcoholic beverages on campus.
3. Disruption - You may not disrupt the normal activities of the College by physically or verbally interfering with instruction, meetings, traffic, or scheduled administrative functions.
4. Drugs - You may not possess, use, or be under the influence of any narcotic or illegal drug on campus in violation of the laws of the state of North Carolina or of the United States.
5. Fighting - You may not strike or threaten to strike another person for any reason whatsoever. Threatening to strike another person is defined as assault, and striking another person is defined as battery.
6. Gambling - You may not gamble on campus.
7. Possession of Firearms - You may not have a weapon of any kind, including a large knife, in your possession on campus. Law enforcement officers are exempt from this prohibition.
8. Theft - You may not steal the property of another individual or of the College. Students who are caught stealing will be required to make restitution and may be eligible for civil prosecution as well as College discipline.
9. Public Laws - You may not violate the laws of the state of North Carolina while on campus. Doing so may lead to legal actions as well as campus discipline.

RIGHTS OF STUDENTS

If you are accused of a violation of the Code of Student Conduct, A-B Tech guarantees you these rights as the matter is resolved:

1. You have the *right* to a specific written notice of the charges against you.
2. You have the *right* to know the names of your accusers and to have a copy of all their written statements regarding the charges.
3. You have the *right* to decide whether your hearing will be public or private.
4. You have the *right* to a prompt hearing.
5. You have the *right* to have a counsel of your choice present at the hearing.
6. You have the *right* to confront your accusers and to hear all witnesses.
7. You may present witnesses or evidence in your own behalf.
8. You have the *right* to remain silent to avoid self-incrimination.
9. You have the *right* to a full and complete record of the hearing.
10. You have the *right* to an appeal.

GRADING SYSTEM

Notice will be given to all students who are failing at mid-term and final grades will be issued at the end of the term to all students. Students will be graded on the achievement of technical skills, ability to work under supervision, interest in work, initiative, and the ability to apply related information. A student who wants to contest a grade must do so within six weeks of the awarding of the grade. A grade cannot be changed after this period without approval by the department, division, and by the Assistant Vice President of Instructional Services.

Students will be graded by the following system:

A	93-100	Excellent academic performance consistent mastery of facts and concepts and a thorough under standing of course content.
B	86-92	Good academic performance high level mastery of course content.
C	78-85	Average academic performance.
D	70-77	Marginal academic performance poor mastery of course content.
F	Below 70	Very poor performance no demonstration of even minimal mastery of course content.

I	Incomplete
X	Continuing
W	Official Withdrawal...No Penalty
P	Proficiency Credit by Examination
T	Transfer Credit (External)
Y	Audit; See Auditing Courses
AP	Alternate Proficiency
NP	Non-Proficiency

I...Incomplete: Assigned when a student is unable to complete work or take a final examination because of illness or for other reasons over which the student has no control. An "incomplete" must be removed within the first six weeks of the next term. Otherwise, the grade becomes an "F."

X...Continuing: Assigned when a student is unable to complete work during the current quarter because of class scheduling over consecutive quarters or at the discretion of the instructor to allow additional time to complete work. A "contract" of conditions for completion and time limit, not to exceed twelve (12) months, will be executed by the instructor and signed by both the instructor and student. If the terms to remove the grade of "X" are not fulfilled by the end of the contract period, the grade will revert to the average held at the beginning of the contract period.

W...Given when the student OFFICIALLY WITHDRAWS. This will not influence the quality point ratio.

AP and NP. . .Given on an individually approved basis for students who have documented exceptional needs.

PRIVACY OF STUDENT RECORDS

1. In compliance with the Family Educational Rights and Privacy Act of 1974, commonly known as the Buckley Amendment, Asheville-Buncombe Technical Community college will not release information concerning its students except for Directory Information, and as stipulated in paragraph 3 below, Directory Information is defined as:

   a. name
   b. address
   c. telephone number
   d. date of birth and place of birth
   e. major field of study
   f. dates of attendance
   g. degrees received

Directory Information will be released to anyone who asks for it, unless the student specifies in writing to the Registrar's Office that this information is to be withheld. In such cases, no Directory Information will be released.

2. A student over the age of 18 is considered an "eligible student" within the definition of the law and controls who has access to his or her records. A parent of an eligible student does not automatically have access to the student's records. In order for parents to have access to a student's records, beyond Directory Information and without written permission from the student, a parent must certify that the student is economically dependent as defined in Section 152 of the Internal Revenue Code of 1954. If a parent can prove dependency to the registrar by showing a copy of the parent's current tax report form or another acceptable report of current dependency, then the parent may have total access to the student's file.

3. Asheville-Buncombe Technical Community College will release a student's educational records without his or her approval only as follows:

   a. to Asheville-Buncombe Technical Community College officials who have legitimate educational interest in the records.
   b. to officials of another college or university in which a students seeks to enroll.
   c. to certain federal and state educational authorities for purposes of enforcing legal requirements in federally supported educational programs.
   d. to persons involved in granting financial aid for which the student has applied.

e. to state and local authorities to whom information is required to be disclosed under the provisions of a statute adopted prior to November 19, 1974.
f. to testing, research, and accrediting organizations.
g. in compliance with a court order or lawfully issued subpoena.
h. in very narrowly defined emergencies affecting the health and safety of the student or other persons.
i. to parents of eligible students under the provision of paragraph 2 above.

4. For further information concerning the Federal Educational Rights and Privacy Act, a students may contact the Registrar's Office of Asheville-Buncombe Technical Community College.

WITHDRAWAL

In order to obtain an official withdrawal or tuition refund, if due, during the first eight weeks of a quarter, a student must complete a *Registration Change Notice* form obtained from the Office of the Registrar. The student must have the form signed by the appropriate instructor(s) and return it to the Office of the Registrar. The student will receive a grade of "W," which will not influence the quality point ratio for the quarter. Any student who ceases to attend classes and does not complete the *Registration Change Notice* form will have a grade of F recorded for the class.

After the eighth week of the quarter, any student who stops attending class will receive a grade of F.

Exceptions to the above policy such as serious illness or job transfer requiring withdrawal from *all* classes will be considered on an individual basis.

A student who has withdrawn from a class may no longer attend the class.

QUALITY POINTS

At the end of each quarter quality points are assigned in accordance with the following formula. (The minimum grade-point ratio for graduation is 2.00 or an average of grade C.)

A...4 quality points per credit hour
B...3 quality points per credit hour
C...2 quality points per credit hour
D...1 quality point per credit hour
F...no quality points
I...no quality points
W...no quality points

Quality ratings are determined by dividing the total number of quality points by the number of hours attempted. A ratio of 2.00 indicates that a student has an average of C.

GRADES FOR REPEATED COURSES

All failing grades in required courses must be removed before graduation. If a student fails a prerequisite course, it must be repeated successfully before beginning the next course. This could result in the student being enrolled for a longer period than is normally required to complete requirements for graduation.

As any courses are repeated, the new and recorded grades are compared. The higher of these becomes the official grade. Only a grade of *D* or above can replace an existing grade.

Students may be referred to the Admissions Committee for action if their efforts and/or attitudes are such that, in the judgment of their department chairperson, they cannot be successful in their studies.

ACADEMIC STATUS

(Good Standing)

Good standing status permits curriculum enrollment for program course work at the College. Each of the following conditions must be met to be in good standing:

1. Former students must have graduated or be academically eligible to reenter the College.
2. The student has not been suspended for disciplinary reasons.
3. The student has met all financial obligations to the College or has made satisfactory arrangements with the College to do so.

SATISFACTORY PROGRESS

A curriculum student is making satisfactory progress toward completion of a diploma or a degree program if both of the following requirements are met:

1. A minimum 50 percent of the credit hours attempted during the last quarter of enrollment must be successfully completed. Successful completion for this purpose is defined as receiving a grade of "D" or better.
2. The cumulative quality point average must exceed the level that would result in restricted scheduling.

If a curriculum student is subject to restricted scheduling for the first time and applies for admission as a "new" student in any program, the student is considered as making satisfactory progress during the initial quarter provided the transfer evaluation grade point average is sufficient to avoid directed scheduling **and** the student meets Requirement No. 1 stated above. "New" student status is determined by internal evaluation and transfer of credit. If a student is subject to restricted scheduling again and applies for admission as a "new" student in any program a second time, satisfactory progress is defined as having and maintaining a quality point average of 2.00 or better and having met Requirement No. 1 stated above.

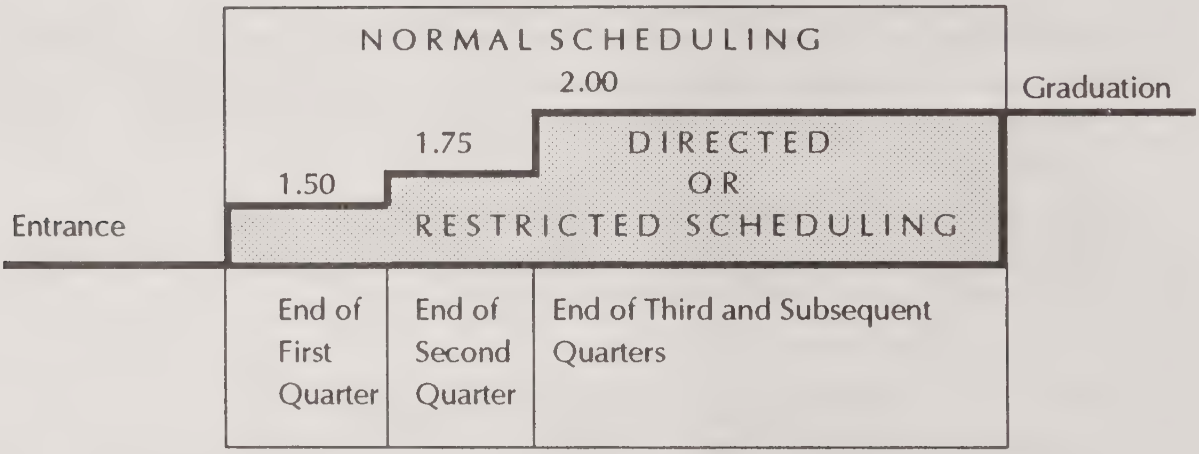
Student appeals will be heard by the Vice President, Instructional Services.

DIRECTED AND RESTRICTED SCHEDULING

All students are assigned to an advisor, usually the chairperson or faculty of the department of major study. In large departments, the chairperson or faculty will designate an instructor within the department as an advisor. Evening and weekend students are assigned to department chairpersons and instructors but may receive general guidance from adjunct faculty teaching their major area courses. The faculty advisors assist students with program planning and class scheduling. Counselors and other student services staff support the scheduling process with both program and course advisement. Unclassified students will be assigned to an advisor.

To encourage the completion of course work at a quality level which will lead to successful program completion and meet graduation requirements, the student's cumulative quality point average after the first, second, third, and succeeding quarters should be above the minimum averages shown below:

MINIMUM QUALITY POINT AVERAGE BY QUARTER



Students who have cumulative quality point averages above the minimums shown may continue to register for course work without special advisement. Students who have cumulative quality point averages below the minimums MUST schedule their courses with special approval of their academic advisors. Unclassified students are subject to the guidelines on directed scheduling and restricted scheduling.

Students who do not successfully complete a given course with two attempts must seek academic counseling and may be subject to testing, remedial instruction, or restriction on further repetition of the course.

Directed Scheduling. For the next quarter after the cumulative quality point average is below the stated minimum, the student (1) may not schedule participation in extracurricular activities, including elected student government office, curriculum club offices, activities that require absences from classes more than one class day in succession, and activities at which the student officially represents the College; (2) may not schedule participation in the College intercollegiate athletic program; (3) MUST take a course load of fewer hours than the normal schedule for the curriculum group **or** submit to the Registrar a statement of release (from the major area department chairperson) from reduced course load requirements; and (4) must schedule a review with the academic advisor at mid-quarter.

Restricted Scheduling. The second consecutive quarter in which the cumulative quality point average is below the stated minimum additional scheduling restrictions apply. (If the student has a current quality point average of 2.00 or above and an improved quality point average, the student will remain under directed scheduling for that quarter.) The restricted scheduling will follow these guidelines: (1) No additional new course work may be taken; courses may be repeated to replace previous grades with higher grades. (2) The academic advisor may require that developmental and guided studies work be scheduled. (3) New course work may be taken in another curriculum program if the student is accepted in that curriculum and scheduling is approved by the academic advisor of the new program.

A student may seek relief from directed or restricted scheduling through an appeal to the Admissions Committee. Appeals must be made in writing within the first five (5) school days of the next quarter. After receipt of the appeal, the Admissions Committee will meet and take action within three school days.

Directed or restricted scheduling will include both academic and general guidance counseling:

(1) Academic advisors will identify and direct or restrict the scheduling of students with below-minimum cumulative quality point averages within the first five (5) school days of the next quarter.
(2) Student services staff responsible for academic records will notify the students of their cumulative quality point average status.
(3) Student services counselors will provide direction for students in planning schedules within directed or restricted scheduling guidelines and in seeking ways to improve their academic work.

DEAN'S LIST

1. Only a full-time student is to be considered. (A full-time student is defined as a student enrolled in a curriculum program, carrying a minimum of 12 credit quarter hours, or the maximum number of credit hours scheduled for the curriculum.)
2. Student is to have a minimum 3.50 quality point average to qualify for the quarter under consideration.
3. Grades of F, I, or X will eliminate a student from the dean's list for that particular quarter. Students receiving credit for a course by examination are not affected.
4. The list will be compiled by the Registrar and sent to the Department Chair persons. The Vice-President, Instructional Services, will be responsible for final approval and publication on campus.
5. A draft of candidates for the Dean's List will be posted on major bulletin boards for students to review prior to publication. Students who leave a course as a result of passing a proficiency examination, and are otherwise qualified for the Dean's List, should notify their major area department chairperson promptly if they are not listed.

DEGREES, DIPLOMAS, AND CERTIFICATES

DEGREE PROGRAMS DEFINED

Asheville-Buncombe Technical Community College will confer an Associate in Arts, Associate in Applied Science, or an Associate in Science. These degrees are conferred in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

DIPLOMA PROGRAMS DEFINED

Asheville-Buncombe Technical Community College awards a technical diploma for some programs. This diploma will be awarded in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

Asheville-Buncombe Technical Community College awards a diploma in all one-year vocational curricula. This diploma is granted in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

CERTIFICATES

Certificates may be issued in the name of the Asheville-Buncombe Technical Community College to students who successfully complete designated short-term programs or course sequences.

NOTE: Records of progress are kept on all students. Progress records are furnished to any student or graduate upon written request.

REQUIREMENTS FOR GRADUATION

The College will hold one graduation ceremony each year. This will normally be the last Friday evening in August. To graduate with a diploma or degree, students must meet the following minimum requirements:

1. Complete the requirements of a College approved program of study according to the student's official catalog. The official catalog is determined by the student in consultation with the academic advisor and must be a College catalog dated no more than five years prior to the date of graduation. For example, a student who is applying for graduation in August, 1995 (94-95 College year), must have completed a program of study according to a catalog dated 1994, 1993, 1992, 1991 or 1990. Under no circumstances can a student select a catalog which was in effect prior to the student's admission to his/her program of study. The student must document the official catalog selected on the Application for Graduation.
2. Each course in the program of study must be completed by one of the following methods:
   a. Take the course at A-B Tech.
   b. Receive transfer credit.
   c. Take an A-B Tech proficiency exam.

   At least half of the credit hours in a program of study must be received at this College by taking courses and/or proficiency examinations.

3. Earn a grade of at least C in each course in the major and a minimum average of 2.0 (C) quality points on course work presented for graduation. Students completing their study with a grade point average of 4.0 will graduated with highest honors. Those who have a minimum average of 3.75 will be graduated with high honors and a minimum of 3.50 has the distinction of honors.
4. Submit an application for graduation to the Bookstore before the published deadline date. Purchase caps, gowns, and diplomas. (Prices may vary from year to year and do not include the purchase of optional items such as invitations or billfold diplomas.)
5. Be in good standing; fulfill all financial obligations to the College; library clearance is also required.
6. Be present for graduation and attired in the proper academic robe. (Students who cannot attend graduation must submit to the President a written request to be excused two weeks prior to graduation.)

CAMPUS SERVICES

LRC

The LRC provides a variety of services. A coin-operated copier and a microfiche/ microfilm reader/printer are available. The LRC also provides typewriters and computers free of charge.

Interlibrary loan service is available through computer connections with other libraries. For the convenience of students, a number of routine library functions are now automated. The LRC has electronic indexes, such as NEWSBANK and PROQUEST, as well as an automated catalog to the collection and automated circulation. These services are available during regular operating hours.

The Dental Hygiene Department provides oral health services, such as cleaning the teeth, dental X-rays, nutritional counseling, and patient education. A nominal fee is charged for these services. Call the Dental Hygiene Clinic, extension 255, for an appointment and charges for services.

BOOKSTORE

A bookstore is operated by the College for the convenience of students and staff members to provide required textbooks and materials. Students should plan to purchase all texts and materials at the beginning of each quarter.

Textbook costs vary considerably depending upon the curriculum and quarter. Book costs vary from year to year because of changes in curriculum book prices, texts, and material requirements.

Applications for Graduation/Cap and Gown Order Forms are collected by the bookstore in April. Graduation fees are due in May. Graduation invitations are also available in the bookstore.

CHILD CARE

Asheville-Buncombe Technical Community College offers child care services for children of College students. Faculty, staff, and the general public may also apply for the service.

The Center, operated by Buncombe County Child Development, is open both during day and evening hours.

The day program accepts children from 2 months to 5 years. The evening program will care for the older child as well. An evening meal is provided. Fees are determined by income and size of family.

Arrangements can be made by calling either 255-5725 or 255-5111 from 8:30 a.m. to 5:00 p.m. Monday through Friday.

COLLEGE CLOSING OR LATE OPENING

The College will either be closed or opened on a late schedule when inclement weather conditions warrant a decision. Closing or delaying announcements will be made on Asheville radio and television stations and some surrounding community radio stations. Individual announcements are made for the day and evening programs. Students may phone the switchboard if they live in areas where Asheville stations are not received.

FOOD SERVICES

Food service is available in the Oak Gym/Student Center. Breakfast and lunch meals, including sandwiches, salads, and soups, are prepared daily. Hours of operation are from 7:00 a.m. to 2:00 p.m.

Vending machines dispensing soft drinks, coffee, and snacks are located at various locations around campus.

The Culinary Technology and Hotel and Restaurant Management students serve lunch on Thursdays. See the student newspaper, "Bits 'N Pieces," for times, dates, and reservation information.

PARKING LOCATIONS

Parking is provided at various locations around campus. Please refer to the campus map located in this catalog for specific sites. Spaces for disabled students are provided at all locations. Parking areas are lighted during evening hours.

Spaces marked with yellow lines are reserved for faculty, staff, disabled, and visitors. White-lined spaces are reserved for students.

RECREATION CENTER

A recreation center is located in the Oak Gym/Student Center for those students with spare time and who wish to play coin-operated video games or billiards.

SECURITY

Security personnel are on duty 24 hours a day, seven days a week. Each security officer is certified to respond to medical emergencies.

STUDENT HOUSING

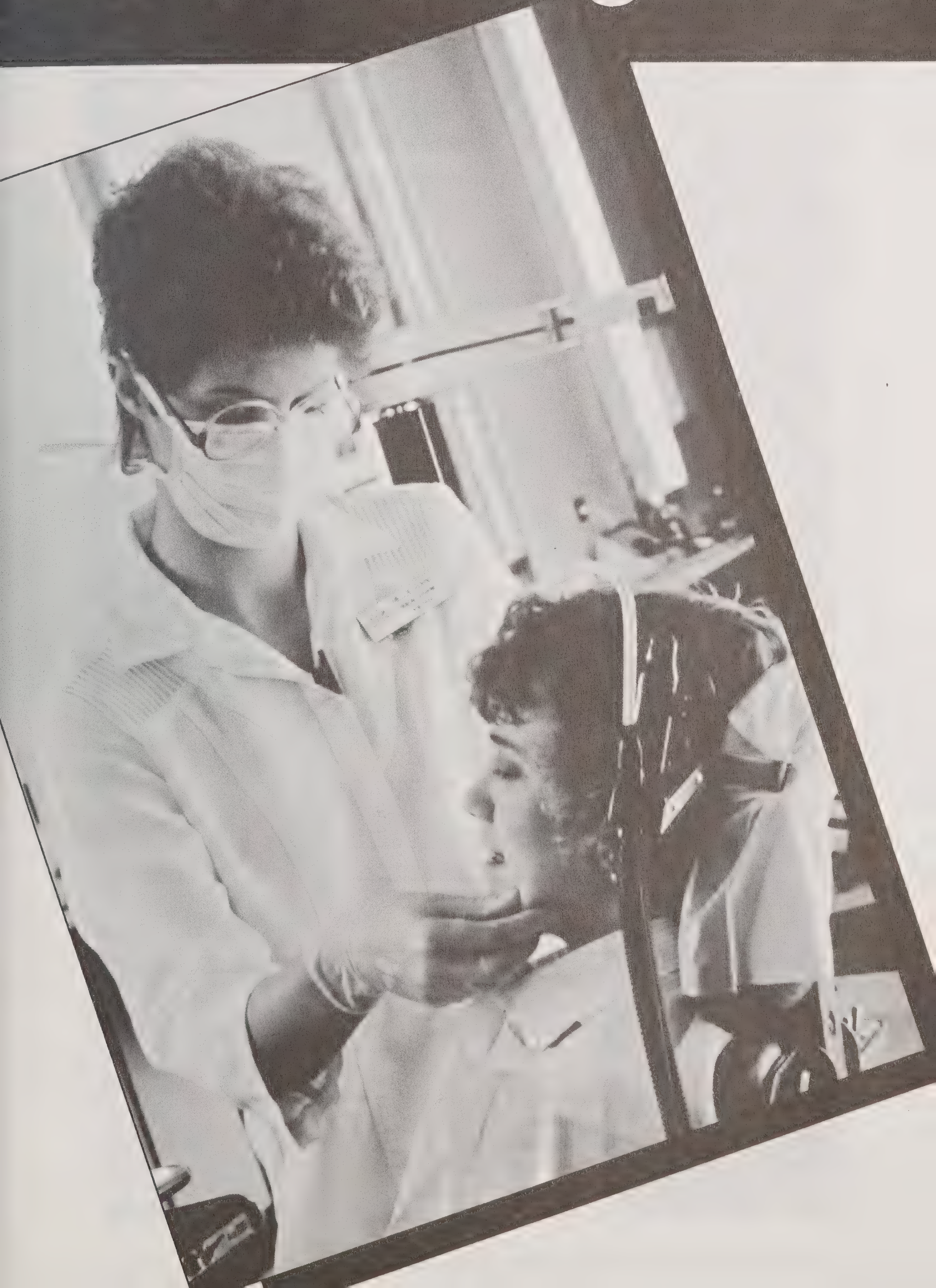
Students are responsible for their own living accommodations. A-B Tech neither approves nor maintains housing facilities. Students who are looking for housing or roommates may check bulletin boards in the Azalea Building or the Oak Gym/Student Center.

PLACEMENT SERVICE

No reputable college can guarantee jobs for graduates. However, the College will assist students and alumni in every possible way in obtaining suitable employment. The College provides placement service for both full time and part-time jobs through the Placement Office, which is located in the Oak Gym/Student Center.

Christmas party for Headstart children is an annual event of the Student Government Association.

Career Programs



ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

	Associate Degree Nursing	**Dental Assisting**	**Dental Hygiene**
Recommended High School Courses	Algebra II Adv. Biology Composition Courses in Health Occupations Anatomy/ Physiology Keyboarding	Chemistry Advanced Biology Courses in Health Occupations	Anatomy Plane Geometry (or Algebra II) Advanced Biology Chemistry Courses in Health Occupations
A-B Tech Entrance Requirements	Chemistry Biology English (4 units) Mathematics (2 units, one unit must be Algebra) *Competitive selection* after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT). See Selection Criteria and Procedures for Medical and Dental Programs brochure for full details.	*Competitive selection* after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT). See Selection Criteria and Procedures for Medical and Dental Programs brochure for full details.	English (4 units) Mathematics (2 units: one must be Algebra) Chemistry Biology *Competitive selection* after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT). See Selection Criteria and Procedures for Medical and Dental Programs brochure for full details.
Program Schedule	Day Begins Fall	Day Begins Fall	Day Begins Fall
Degree	Associate in Applied Science	Diploma	Associate in Applied Science
Employment Opportunities	Hospitals Long Term Care Facilities Clinics Physicians Offices Industry Community Health Agencies	V.A. Clinics Health Depts. State Clinics Dental Schools Private & Group Practices Clinics	Dental Offices Education Local, State, & Federal Govt. Agencies Private Industry

ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

	Early Childhood Associate	Emergency Medical Science	Law Enforcement Technology
Recommended High School Courses	Composition Literature Keyboarding Courses in Childcare Occupations	Anatomy Biology Mathematics Algebra I Chemistry Composition Courses in Health Occupations	English courses particularly those with emphasis on writing skills
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	*Competitive selection* after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT). See Selection Criteria and Procedures for Medical and Dental Programs brochure for full details.	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).
Program Schedule	Day Begins Fall	Day Begins Fall	Day/Night Begins Fall Can take single courses any quarter
Degree	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
Employment Opportunities	Child Care Worker Day Care Worker Child Care Assistant Director, Day Care Director, Preschool	Emergency Medical Services Hospitals Emergency Care Clinics Health Depts. Doctor's Offices General Clinics Private Ambulance Companies	Local Law Enforcement Highway Patrol Deputy Sheriff Private Security

Continued on next page

ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

	Medical Laboratory Technology	Practical Nursing	Radiologic Technology
Recommended High School Courses	Anatomy Biology (strongly recommended) Geometry (strongly recommended)	Anatomy/Physiology Adv. Biology English Composition Courses in Health Occupations	Anatomy Biology Physics (strongly recommended)
A-B Tech Entrance Requirements	Chemistry Algebra I English (4 units) *Competitive selection* after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT). See Selection Criteria and Procedures for Medical and Dental Programs brochure for full details.	Mathematics Biology *Competitive selection* after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT). See Selection Criteria and Procedures for Medical and Dental Programs brochure for full details.	Biology Algebra I *Competitive selection* after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT). See Selection Criteria and Procedures for Medical and Dental Programs brochure for full details.
Program Schedule	Day Begins Fall	Day Begins Fall	Day Begins Fall
Degree	Associate in Applied Science	Diploma	Associate in Applied Science
Employment Opportunities	Hospitals Emergency Care Clinics, Health Departments Doctor's Offices General Clinics	Hospitals Long-Term Care Facilities Physicians' Offices Industry Community Health Agencies	Hospitals Health Depts. Doctors Offices Emergency Care Clinics Industry

ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

The Allied Health and Public Service Education Program provides an opportunity for extensive and intensive study in several areas of health and public service professions. It will enable the student to engage in a health/public service career of his/her choice and acquire sufficient knowledge to enjoy a healthful and satisfying life and also develop an understanding of helping others in work and everyday living. Students desiring training in health/ public service occupations need to have a background in science, chemistry, biology, social sciences, and varying degrees of mathematics, and possess the emotional stability required by the profession.

For programs that are declared to be competitive, there will be an application deadline and selection criteria that will be published from year to year.

Applicants to the various health/public service programs should be aware that felony convictions and past offenses with drugs and crimes involving moral turpitude may prevent the prospective student from obtaining licensure or participating in certain learning activities. College admissions personnel should be informed of any prior problems in these areas so that appropriate steps can be taken to assure that the applicant can successfully complete the program and obtain the necessary licensure or certification.

A.A.S. DEGREE CONFERRED

Associate Degree Nursing
Dental Hygiene
Early Childhood Associate
Emergency Medical Science
Law Enforcement Technology
Medical Laboratory Technology
Radiologic Technology

DIPLOMA AWARDED

Dental Assisting
Practical Nursing

CERTIFICATE AWARDED

Basic Law Enforcement Technology
Early Childhood Associate
Phlebotomy

ASSOCIATE DEGREE NURSING

The Associate Degree Nursing curriculum is designed to prepare graduates to integrate the principles and theories of nursing and the sciences in utilizing the nursing process in the practice of nursing. The practice of nursing by associate degree nursing graduates consists of: assessing the patient's physical and mental health, including the patient's reaction to illness and treatment regimens; recording and reporting the results of the nursing assessment; planning, initiating, delivering, and evaluating appropriate nursing acts; teaching, delegating and supervising other personnel in implementing the treatment regimen; collaborating with other health care providers in determining the appropriate health care for a patient; implementing the treatment and pharmaceutical regimen prescribed by any person authorized by State law to prescribe such a regimen; providing teaching and counseling about the patient's health care; reporting and recording the plan for care, nursing care given, and the patient's response to that care; and supervising, teaching, and evaluating those who perform or are preparing to perform nursing functions.

Graduates are eligible to take the National Council Licensure Examination (NCLEX-RN) which is required for practice as a registered nurse.

Individuals desiring a career in registered nursing should take biology, algebra and chemistry courses prior to entering the program.

Job Opportunities

Registered Nurse

Specific Entrance Requirements

1. General college admission requirements.
2. Have high school credit with grade of at least "C" for four units of English, two units of mathematics one of which must be algebra, chemistry, and biology.
3. Keyboarding skills are strongly recommended.
4. Three personal references.
5. Acceptable reports of medical examinations by first day of class.
6. Completion of required immunizations by the first day of class.
7. The North Carolina Board of Nursing may deny license to individuals *convicted of a felony or any other crime involving moral turpitude.*
8. Entry into any quarter by transfer or other means except during first quarter is based upon approval by the Department chairperson and availability of space.

ASSOCIATE DEGREE NURSING

Associate in Applied Science Degree

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
NUR	101	Fundamentals of Nursing I	3	6	0	6
BIO	101	Human Anatomy and Physiology I	4	3	0	5
CHM	101	Fundamentals of Physiological Chemistry	3	2	0	4
NUT	101	Nutrition	3	0	0	3
			13	11	0	18

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Clinic	
Second Quarter (Winter)						
NUR	103	Fundamentals of Nursing II	5	0	9	8
BIO	102	Human Anatomy and Physiology II	4	3	0	5
PSY	101	Introduction to Psychology	3	0	0	3
			12	3	9	16
Third Quarter (Spring)						
NUR	105	Fundamentals of Nursing III	5	0	9	8
BIO	103	Microbiology	4	3	0	5
PSY	203	Abnormal Psychology	3	0	0	3
ENG	150	Grammar and Composition	3	0	0	3
			15	3	9	19
Fourth Quarter (Summer)						
*NUR	206	Psychiatric Nursing	4	0	6	6
*NUR	207	Maternity Nursing	4	0	6	6
PSY	105	Human Growth and Development	3	0	0	3
SOC	201	Social Problems	3	0	0	3
			14	0	12	18
Fifth Quarter (Fall)						
NUR	210	Medical Surgical Nursing I	7	0	15	12
ENG	151	Composition and Introduction to Literature	3	0	0	3
			10	0	15	15
Sixth Quarter (Winter)						
NUR	211	Nursing Seminar I	3	0	0	3
NUR	212	Medical Surgical Nursing II	7	0	15	12
ENG	204	Oral Communications	3	0	0	3
			13	0	15	18
Seventh Quarter (Spring)						
NUR	213	Nursing Seminar II	0	2	0	1
NUR	214	Medical Surgical Nursing III	8	0	18	14
			8	2	18	15
		Program Totals	85	19	78	124**

*Mini-Courses

**In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

Selected courses from this program are also offered in the evening schedule.

BASIC LAW ENFORCEMENT TRAINING

The Basic Law Enforcement Training curriculum certificate program prepares individuals to take the Basic Training Law Enforcement Officers certification examination mandated by the North Carolina Criminal Justice Education and Training Standards Commission and/or it prepares individuals to take the Justice Officers Basic Training certification examination mandated by the North Carolina Sheriffs' Education and Training Standards Commission. Successful completion of this curriculum certificate program requires that the student satisfy the minimum requirements for certification by the Criminal Justice Commission and/or the Sheriffs' Commission. The student satisfactorily completing this program should possess at least the minimum degree of general attributes, knowledge, and skills to function as an inexperienced law enforcement officer.

Job opportunities are available with state, county, and municipal governments in North Carolina. In addition, knowledge, skills, and abilities acquired in this course of study qualify one for job opportunities with private enterprises in such areas as industrial, retail, and private security.

Job Opportunities

College or University Officer
Deputy Sheriff
Industrial Security Officer
Investigator
Police Officer
Park Security Officer
Private Security Officer
Retail Security Officer

Specific Entrance Requirements

1. General College admission requirements.
2. Individual must meet the Minimum Standard for Employment Criteria outlined in North Carolina Code Book--General Statute 17-A and Title-12 Chapter 9 North Carolina Administrative Code.

Conditions of Enrollment

Basic Law Enforcement Training is offered as a unit. It cannot be completed by portions but must be completed in its entirety. State law mandates 100 percent attendance. The School Director can authorize absences for emergencies. These absences must be made up before the completion of the quarter. If absences exceed 10 percent for any reason, the student is automatically excluded from further attendance and must complete another offering of Basic Training in its entirety.

Basic Law Enforcement Training
Certificate Awarded

			Hrs. Per Week			Credit
			Class	Lab	Skills	Hrs.
Offered on Demand						
BLE	100	Basic Law Enforcement	16	0	30	26
			16	0	30	26

This program is also offered in the evening programs. See Evening Programs listing.

DENTAL ASSISTING

The Dental Assisting curriculum prepares graduates to assist the dentist in providing treatment services. Functions performed by the dental assistant include dental health teaching, preparing dental materials to be used, preparing the patient, taking dental X-rays, caring for dental supplies and equipment, passing instruments and materials to the dentist, making appointments, maintaining patient records, and other office management procedures. Graduates may practice in dental settings, such as dentists' offices, dental clinics, public health clinics, federal service clinics, dental schools, and state health departments.

This curriculum prepares the graduate for certification as a Certified Dental Assistant by the Certifying Board of the Dental Assisting National Board, Incorporated.

Individuals desiring a career in dental assisting should, if possible, take biology, mathematics, and typing courses prior to entering the program.

Job Opportunities

Dental Assistant

Specific Entrance Requirements

1. General college Allied Health admissions requirements.
2. Acceptable reports of medical and dental examinations.
3. Certification in CPR within six months of entering program.
4. Strongly recommend acquiring hepatitis B vaccine with at least first two doses completed before entering program.

DENTAL ASSISTING

Diploma

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
DEN	1103	Dental Materials I	2	4	0	4
DEN	1120	Clinical Science I	3	6	0	6
DHY	101	Head, Neck, and Oral Anatomy	3	4	0	5
BIO	1109	Biomedical Sciences	4	2	0	5
			12	16	0	20
Second Quarter (Winter)						
DEN	1122	Dental Materials II	2	3	0	3
DEN	1123	Oral Health Education	2	4	0	4
DEN	1130	Clinical Science II	3	3	3	5
DHY	103	Dental Radiology	3	3	0	4
ENG	101	Fundamentals of English	3	0	0	3
			13	13	3	19

Third Quarter (Spring)

DEN	1125	Dental Affiliation I	1	0	12	5
DEN	1126	Dental Sciences	5	0	0	5
DEN	1131	Dental Office Management	3	2	0	4
DHY	112	Dental Office Emergencies	2	2	0	3
			11	4	12	17

Fourth Quarter (Summer)

DEN	1135	Dental Affiliation II	1	0	18	7
DEN	1141	Professional Development	2	0	0	2
ENG	204	Oral Communications	3	0	0	3
PSY	206	Applied Psychology	3	0	0	3
(PSY	101	Introduction to Psychology)	(3)	(0)	(0)	(3)
			9	0	18	15
		Program Totals	45	33	33	71

Selected courses from this program are also offered in the evening schedule.

DENTAL HYGIENE

The Dental Hygiene curriculum prepares graduates to take patient histories, teach oral hygiene, clean teeth, take X-rays and apply preventive agents under the supervision of a dentist. Dental hygienists may be employed in dentists' offices, clinics, schools, public health agencies, industry, and educational institutions.

Graduates are eligible to take the Dental Hygiene National Board written examination, which is administered by the American Dental Association, Joint Commission on National Dental Examinations; and the State Board Clinical Examination, which is administered by the North Carolina Board of Dental Examiners. A passing grade on both examinations is required for practice as a Registered Dental Hygienist in North Carolina.

Individuals desiring a career in Dental Hygiene should take biology, algebra, and chemistry courses prior to entering the program.

Job Opportunities

Dental Hygienist

Specific Entrance Requirements

1. General college Allied Health admission requirements.
2. Have high school credit for four units of English, two units of mathematics one of which must be algebra, one unit of chemistry and one unit of biology. Science oriented college preparatory courses are recommended.
3. Acceptable reports of medical and dental examinations.
4. Strongly recommend acquiring hepatitis B vaccine with at least first two doses completed before entering program.

DENTAL HYGIENE

Associate in Applied Science Degree

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Clinic	
First Quarter (Fall)						
DHY	101	Head, Neck and Oral Anatomy	3	4	0	5
DHY	110	Pre-Clinical Dental Hygiene I	3	6	0	6
BIO	101	Human Anatomy and Physiology I	4	3	0	5
ENG	101	Fundamentals of English	3	0	0	3
			13	13	0	19
Second Quarter (Winter)						
DHY	103	Dental Radiology	3	3	0	4
DHY	111	Pre-Clinical Dental Hygiene II	3	6	0	6
BIO	102	Human Anatomy and Physiology II	4	3	0	5
CHM	101	Fundamentals of Physiological Chemistry	3	2	0	4
ENG	102	Composition	3	0	0	3
			16	14	0	22
Third Quarter (Spring)						
DHY	106	Oral Embryology and Histology	2	0	0	2
DHY	112	Dental Office Emergencies	2	2	0	3
DHY	116	Dental Hygiene Seminar I	1	0	0	1
DHY	117	Dental Hygiene Clinic I	0	0	9	3
DHY	206	Dental Materials	3	4	0	5
BIO	103	Microbiology	4	3	0	5
			12	9	9	19
Fourth Quarter (Summer)						
DHY	114	General and Oral Pathology	3	0	0	3
DHY	118	Dental Hygiene Seminar II	3	2	0	4
DHY	119	Dental Hygiene Clinic II	0	0	9	3
NUT	101	Nutrition	3	0	0	3
PSY	101	Introduction to Psychology	3	0	0	3
			12	2	9	16
Fifth Quarter (Fall)						
DHY	205	Periodontology	3	0	0	3
DHY	216	Dental Hygiene Seminar III	2	0	0	2
DHY	217	Dental Hygiene Clinic III	0	0	12	4
DHY	221	Pharmacology	3	0	0	3
SOC	201	Social Problems	3	0	0	3
			11	0	12	15
Sixth Quarter (Winter)						
DHY	203	Community Dental Health I	3	2	0	4
DHY	218	Dental Hygiene Seminar IV	2	2	0	3
DHY	219	Dental Hygiene Clinic IV	0	0	12	4
ENG	204	Oral Communications	3	0	0	3
			8	4	12	14

Seventh Quarter (Spring)

DHY	222	Community Dental Health II	1	3	0	2
DHY	223	Dental Hygiene Seminar V	3	2	0	4
DHY	224	Dental Hygiene Clinic V	0	0	12	4
ENG	103	Report Writing	3	0	0	3
			7	5	12	13
		Program Totals	79	47	54	123*

Selected courses from this program are also offered in the evening schedule.

**In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.*

EARLY CHILDHOOD ASSOCIATE

The Early Childhood Associate curriculum prepares individuals to work with programs and/or centers concerned with the care and development of infants and young children. Through study and application in such areas as child growth and development, physical and nutritional needs of children, care and guidance of children and communication with children and their parents, individuals will be able to function effectively in various programs and/or centers dealing with preschool children.

Job opportunities are available in such areas as day care centers, nursery schools, kindergartens, child development centers, hospitals, rehabilitation clinics, evaluation clinics, camps and recreational centers.

Job Opportunities

Entry Level	Advanced Level
Child Care Worker	Director, Day Care
Day Care Worker	Director, Preschool
Child Care Assistant	

EARLY CHILDHOOD ASSOCIATE

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
EDU	103	Orientation to Early Childhood Education	1	4	3
EDU	104	Creative Activities in Early Childhood	4	2	5
EDU	115	Child Development 1	3	2	4
ENG	101	Fundamentals of English	3	0	3
PED	177	CPR/First Aid and Safety	1	2	2
			12	10	17

Second Quarter (Winter)					
EDU	105	Early Childhood Education: Foundations or EDU 101 Early Childhood Education Credential I 3-0-3 and EDU 102 Early Childhood Education Credential II 3-0-3	5	0	5
EDU	106	Health, Safety, & Nutrition in Early Childhood	4	2	5
EDU	116	Child Development II	3	0	3
EDU	121	Seminar Practicum - Preschool	1	10	2
ENG	102	Composition	3	0	3
			16	12	18
Third Quarter (Spring)					
EDU	107	Communication & Behavior in Early Childhood	4	0	4
EDU	108	Child, Family, and Community Services	1	4	3
EDU	117	Child Development III	3	0	3
EDU	122	Seminar Practicum - Child Care	1	10	2
PSY	206	Applied Psychology	3	0	3
			12	14	15
Fourth Quarter (Summer)					
EDU	109	Instructional Materials & Equipment	3	0	3
EDU	110	Exploration Activities in Early Childhood	6	0	6
EDU	111	Working with Parents & Families	4	0	4
ENG	204	Oral Communications	3	0	3
SOC	201	Social Problems	3	0	3
			19	0	19
Fifth Quarter (Fall)					
EDU	201	Early Childhood Skill Development: Communications	5	0	5
EDU	202	Children with Special Needs	5	0	5
EDU	221	Seminar Practicum - Primary School	1	10	2
MAT	110	General College Mathematics	5	0	5
			16	10	17
Sixth Quarter (Winter)					
EDU	203	Early Childhood Curriculum Planning	4	0	4
EDU	222	Seminar Practicum-Special Needs	1	10	2
CAS	104	Introduction to Business Data Processing	2	2	3
ENG	260	Children's Literature	3	0	3
			10	12	12
Seventh Quarter (Spring)					
EDU	204	Program Administration	3	0	3
EDU	225	Early Childhood Internship	2	20	4
ENG	103	Report Writing	3	0	3
			8	20	10

Total Credit Hours Required for Degree: 111*
Total Credit Hours Required for Certificate: 20

*This total includes the previously stated courses plus a minimum of three (3) credit hours of non-major electives(s).

(Required courses for Certificate program: EDU 105 (or EDU 101 and EDU 102), EDU 104, and nine (9) additional credit hours selected from EDU courses offered.)
Selected courses from this program are also offered in the evening schedule.

EMERGENCY MEDICAL SCIENCE

The Emergency Medical Science curriculum is designed to prepare graduates, while under the direct supervision of a physician or mobile intensive care nurse, to perform patient assessments and render emergency care in the pre-hospital and hospital setting. Students will learn basic and advanced life support skills through a combination of classroom teaching, with practice in laboratory sessions and clinical experience, with emergency medical services, and community hospitals.

As students progress through the curriculum, they become eligible to take certifying examinations for EMT, EMT-D, EMT-I, EMT-AI and EMT-P given by the North Carolina Office of Emergency Medical Services and/or the National Registry of Medical Technicians.

Graduates may be employed in ambulance or rescue squad services, flight transport services, specialty care areas of hospitals, industry, medical supply companies, educational institutions, and governmental agencies.

Individuals desiring a career in emergency medical science should take biology and mathematics. It would be beneficial to have had chemistry prior to entering the program.

Job Opportunities

Ambulance Attendant
Emergency Medical Technician
Emergency Medical Technician - Defibrillator
Emergency Medical Technician - Intermediate
Emergency Medical Technician - Advanced Intermediate
Emergency Medical Technician - Paramedic
E.M.S. Manager/Director
E.M.S. Training Officer/Instructor

Specific Entrance Requirements

1. General college admission requirements.
2. Must be 18 years of age at the end of the first quarter of the program.
3. Current N.C. driver's license.
4. Acceptable reports of medical and dental examinations.
5. Character/employment references (three).
6. The North Carolina Office of Emergency Medical Services requires that a physician certify the "candidate to be physically fit and free from physical defects, handicaps, or diseases" which might impair ability to drive, attend an ambulance, and/or perform any duties prescribed by OEMS.
7. The North Carolina Office of Emergency Medical Services may deny certification to individuals convicted of a felony or any other crime involving moral turpitude.

EMERGENCY MEDICAL SCIENCE
Associate in Applied Science Degree

		Hrs. Per Week			Credit
		Class	Lab	Clinic	Hrs.
First Quarter (Fall)					
++EMS 101	Fundamentals of EMS	8	6	0	10
BIO 101	Human Anatomy & Physiology I	4	3	0	5
PSY 101	Introduction to Psychology	3	0	0	3
		15	9	0	18

Second Quarter (Winter)

+EMS	104	Injury Management I	5	3	0	6
+EMS	105	Clinical Seminar & Practicum I	0	0	9	3
EMS	112	Emergency Communications, and Record Keeping	2	2	0	3
BIO	102	Human Anatomy & Physiology II	4	3	0	5
			11	8	9	17

Third Quarter (Spring)

EMS	103	Principles of Extrication & Rescue	4	3	0	5
EMS	106	Introduction to Pharmacology	4	0	0	4
EMS	108	Clinical Seminar & Practicum II	0	0	9	3
ENG	101	Fundamentals of English	3	0	0	3
PSY	203	Abnormal Psychology	3	0	0	3
			14	3	9	18

Fourth Quarter (Summer)

EMS	110	Pharmacology for EMS	5	0	0	5
EMS	111	Clinical Seminar & Practicum III	0	0	9	3
EMS	113	Emergency Vehicle Operation	2	2	0	3
EMS	201	Advanced Life Support I	4	2	0	5
ENG	102	Composition	3	0	0	3
			14	4	9	19

Fifth Quarter (Fall)

EMS	202	Clinical Seminar & Practicum IV	0	0	9	3
EMS	203	Emergency Psychiatric Care	3	0	0	3
EMS	204	Adjuncts for Airway Control and Ventilation	2	0	0	2
EMS	208	Advanced Life Support II-Trauma	2	2	0	3
EMS	210	Advanced Life Support III-Medical	4	0	0	4
AHE	213	Hazardous Materials & Disaster	2	2	0	3
			13	4	9	18

Sixth Quarter (Winter)

EMS	206	Clinical Seminar & Practicum V	0	0	9	3
EMS	207	OB, Newborn, and Pediatric Emergencies	4	2	0	5
ENG	204	Oral Communications	3	0	0	3
SOC	201	Social Problems	3	0	0	3
		Elective (minimum 3 credit hours)	3	0	0	3
			13	2	9	17

Seventh Quarter (Spring)

EMS	211	Clinical Symposium	3	2	6	6
AHE	215	EMS Personnel Management	4	0	0	4
AHE	216	Fundamentals of Public Safety	3	2	0	4
ENG	103	Report Writing	3	0	0	3
			13	4	6	17
		Program Totals	93	34	51	127*

All courses are required for the A.A.S. degree.
++Courses required for EMT...Certification.
+Courses required for EMT...Intermediate Certification.

Selected courses from this program are also offered in the evening schedule.

*In addition to the previously stated required courses, a minimum of three (3) credit hours of non-major elective(s) must be taken before graduation.

LAW ENFORCEMENT TECHNOLOGY

The Law Enforcement Technology curriculum prepares individuals for a career in the law enforcement services occupations field and other allied occupations. Law enforcement occupations require a thorough understanding of criminal behavior, criminal investigation, interpersonal communications, law, patrol operations, psychology, sociology, traffic management and other aspects of law enforcement administration and operations.

Job opportunities are available with federal, state, county, and municipal governments. In addition, knowledge, skills, and abilities acquired in this course of study qualify one for job opportunities with private enterprise in such areas as industrial, retail, and private security.

Job Opportunities

Alcohol Enforcement Officer
College or University Officer
Correctional Officer
Correctional Programs Assistant
Deputy Sheriff
Industrial Security Officer
Investigators
Highway Patrolman
Police Officer
Park Security Officer
Private Security Officer
Retail Security Officer
Wildlife Enforcement Officer

The North Carolina Training and Standards Commission requires that every law enforcement officer complete an approved basic training program.

SPECIFIC ENTRANCE REQUIREMENTS

1. General college admission requirements.
2. Three character references are required. One of the references must be from a local law enforcement agency.
3. Individuals seeking careers as law enforcement officers must meet the Minimum Standards for Employment criteria outlined in the North Carolina Code Book-General Statute 17-A. These may be reviewed in law enforcement agencies or the Student Services office at the College. These requirements are independent of the College and its program.

LAW ENFORCEMENT TECHNOLOGY
Associate in Applied Science Degree

			Hrs. Per Week		Credit Hrs.
			Class	Lab	
First Quarter (Fall)					
LET	101	Introduction to Criminal Justice	5	0	5
ENG	100	Reading Comprehension	1	2	2
POL	103	State and Local Government	4	0	4
PSY	101	Introduction to Psychology	3	0	3
ELECTIVE					
			13	2	14
Second Quarter (Winter)					
LET	102	Introduction to Criminology	5	0	5
EMS	100	Introduction to Emergency Medical Services	2	2	3
ENG	101	Fundamentals of English	3	0	3
MAT	100	Basic Mathematics	5	0	5
ELECTIVE					
			15	2	16
Third Quarter (Spring)					
LET	115	Criminal Law I	3	0	3
LET	205	Criminal Evidence	4	0	4
ENG	102	Composition	3	0	3
PSY	203	Abnormal Psychology	3	0	3
ELECTIVE					
			13	0	13
Fourth Quarter (Summer)					
LET	201	Motor Vehicle Law	3	0	3
LET	210	Criminal Investigation I	4	0	4
LET	216	Criminal Law II	3	0	3
ENG	204	Oral Communications	3	0	3
PHO	201	Introduction to Photography	1	2	2
ELECTIVE					
			14	2	15
Fifth Quarter (Fall)					
LET	110	Introduction to Juvenile Justice	5	0	5
LET	211	Introduction to Criminalistics	4	2	5
LET	213	Criminal Investigation II	4	0	4
PSY	151	Applied Psychology for Law Enforcement	3	0	3
ELECTIVE					
			16	2	17
Sixth Quarter (Winter)					
LET	125	Judicial Process	4	0	4
LET	200	Crime Prevention	3	0	3
LET	202	Traffic Planning and Management	3	2	4
ENG	103	Report Writing	3	0	3
SOC	201	Social Problems	3	0	3
ELECTIVE					
			16	2	17

Seventh Quarter (Spring)

LET	206	Community Relations	3	0	3
LET	212	Narcotics, Drugs and Human Behavior	3	2	4
LET	217	Patrol Procedures	3	0	3
LET	220	Police Organization, Administration and Supervision	5	0	5
			14	2	15
		Program Totals	101	12	107*

*Plus 8 credit hours of Related Electives and 3 credit hours of General Electives (to be chosen from among any technical level course offered by A-B Tech) for a program total of 118 credit hours.

This program is also offered in the evening schedule. See Evening Programs Listing.

Related Electives

In addition to required courses, students must complete a minimum of eight (8) credit hours of approved Related Electives. These may be taken at any time during the program, providing the student has completed the proper prerequisites and has departmental approval of his/her schedule prior to registration.

Electives may be offered on the basis of results from demand surveys conducted early in the previous quarter. Related Electives may be scheduled from the courses indicated below.

			Hrs. Per Week			Credit
			Class	**Lab**	**Shop**	**Hrs.**
AOT	100	Computer Keyboarding	1	2	0	2
AOT	101	Keyboarding for Office Occupations	2	3	0	3
BIO	101	Human Anatomy and Physiology I	4	3	0	5
BIO	102	Human Anatomy and Physiology II	4	3	0	5
BIO	111	Basic Life Sciences	5	0	0	5
BLE	100	Basic Law Enforcement Training (may serve as the RELATED ELECTIVE requirement)				
BUS	100	Contemporary Business	3	0	0	3
BUS	101	Introduction to Business	3	0	0	3
BUS	114	Business Law	5	0	0	5
BUS	120	Accounting I	3	2	0	4
BUS	121	Accounting II	3	2	0	4
BUS	125	Introduction to Banking Fundamentals	4	0	0	4
BUS	233	Personnel Management and Supervision	3	0	0	3
BUS	234	Introduction to Management	3	2	0	4
CHM	100	Introduction to Chemistry	3	3	0	4
CHM	101	Fundamentals of Physiological Chemistry	3	2	0	4
ECO	102	Economics	3	0	0	3
ECO	107	Consumer Economics	3	0	0	3
ECO	108	Consumer Economics	5	0	0	5
CAS	104	Introduction to Business Data Processing	2	2	0	3
CAS	105	Introduction to Scientific Data Processing	2	2	0	3
LET	105	Introduction to Correction	4	0	0	4
LET	106	Probation and Parole	3	0	0	3
LET	107	Police Liability	3	0	0	3
LET	111	Defense Tactics	1	2	0	2
LET	112	Legal Research	5	0	0	5
LET	116	Criminal Justice Internship	0	0	10	1

LET	250	Topics in Criminal Justice Law Enforcement I	5	0	0	5
MAT	101	Algebra and Trigonometry I	5	0	0	5
MAT	105	Introduction to Algebra	3	0	0	3
MAT	110	General College Mathematics	5	0	0	5
MAT	160	Elementary Statistics	5	0	0	5
PSY	206	Applied Psychology	3	0	0	3

Internships of ten (10) contact hours per week per quarter may be completed by Criminal Justice students in partial fulfillment of the elective requirements. Internships are designed to demonstrate the competency of the student through extension of the learning initiated in previous Criminal Justice courses. A maximum of three (3) credit hours may be earned through internships. Prerequisite: Permission of the department chairperson.

MEDICAL LABORATORY TECHNOLOGY

The Medical Laboratory Technology curriculum prepares graduates to perform clinical laboratory procedures in chemistry, hematology, bacteriology, parasitology, serology, blood banking and body fluid analysis, in order to develop data that may be used in the diagnosis of diseases and in evaluating the effectiveness of treatments.

The medical laboratory technician works under the supervision of a medical technologist and may be employed as a staff technician or assistant supervisor in a medical laboratory, or clinical instructor in an educational institution.

The graduate is eligible to take the registry examination given by the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists for certification as a medical laboratory technician or the examination given by the National Certifying Agency as a clinical laboratory technician.

Individuals desiring a career in medical laboratory technology should, if possible, take algebra, biology and chemistry courses prior to entering the program.

Job Opportunities

Medical Laboratory Technician

CLINICAL EXPERIENCE

Clinical experiences are conducted in Clinical Laboratories at various hospitals. Because of clinical space requirements, students will have individual schedules for MLT clinical experiences.

Specific Entrance Requirements

1. General college admission requirements.
2. High School Units
   a. Chemistry and algebra required.
   b. Biology strongly recommended.
3. Character references (three).
4. Reports of medical and dental examinations.

MEDICAL LABORATORY TECHNOLOGY
Associate in Applied Science Degree

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Clinic	
First Quarter (Fall)						
MLT	107	Clinical Chemistry I	3	0	0	3
MLT	122	Hematology I	2	4	0	4
MLT	123	Microbiology I	3	2	0	4
ENG	101	Fundamentals of English	3	0	0	3
MAT	106	Introduction to Mathematics	3	0	0	3
PSY	101	Introduction to Psychology	3	0	0	3
(PSY	206	Applied Psychology)	(3)	(0)	(0)	(3)
			17	6	0	20
Second Quarter (Winter)						
MLT	114	Immunohematology I	3	2	0	4
MLT	124	Hematology II	1	4	0	3
MLT	125	Microbiology II	3	2	0	4
BIO	101	Human Anatomy and Physiology I	4	3	0	5
CHM	200	Principles of Chemistry I	3	3	0	4
			14	14	0	20
Third Quarter (Spring)						
MLT	112	Clinical Chemistry II	3	0	0	3
MLT	118	Immunohematology II	1	2	0	2
MLT	126	Urinalysis/Parasitology	2	4	0	4
BIO	102	Human Anatomy and Physiology II	4	3	0	5
CHM	201	Principles of Chemistry II	3	3	0	4
CAS	104	Introduction to Business Data Processing	2	2	0	3
			15	14	0	21
Fourth Quarter (Summer)						
MLT	211	Instrumentation	2	0	0	2
MLT	213	Clinical Experience I	0	0	30	10
ENG	204	Oral Communications	3	0	0	3
			5	0	30	15
Fifth Quarter (Fall)						
MLT	214	Clinical Experience II	0	0	30	10
ENG	102	Composition	3	0	0	3
			3	0	30	13
Sixth Quarter (Winter)						
MLT	215	Clinical Experience III	0	0	30	10
ENG	103	Report Writing	3	0	0	3
			3	0	30	13
Seventh Quarter (Spring)						
MLT	216	Clinical Experience IV	0	0	30	10
SOC	201	Social Problems	3	0	0	3
(SOC	101	Introduction to Sociology)	(3)	(0)	(0)	(3)
			3	0	30	13
		Program Totals	60	34	120	118*

Selected courses from this program are also offered in the evening schedule.

*In addition to the previously stated required courses, a minimum of three (3) credit hours of non-major elective(s) must be taken before graduation.

PHLEBOTOMY

A phlebotomy technician curriculum prepares the graduate to draw blood specimens from patients for the purpose of testing and analyzing blood. The job involves duties related to the preparation and maintenance of equipment used in obtaining blood specimen; the use of appropriate communication skills when working with patients; the selection of venipuncture sites; the care of blood specimen; and the entry of the testing process into the computer, as well as clerical duties associated with record keeping of the blood tests.

Job Opportunities

Phlebotomy Technician

PHLEBOTOMY

Certificate

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
PBT	1101	Basic Concepts in Phlebotomy	9	2	0	10
PBT	1102	Phlebotomy Clinical Experience	0	0	12	4
PSY	1101	Human Relations	3	0	0	3
			12	2	12	17

PRACTICAL NURSING

The Practical Nursing curriculum graduates are prepared to take the National Council Licensure Examination required to practice as a licensed practical nurse. The Practical Nursing curriculum is designed to develop competencies in practicing the following five components of practice as defined by the North Carolina **Nursing Practice Act**, 1981: participating in assessing the client's physical and mental health including the client's reaction to illnesses and treatment regimens; recording and reporting the results of the nursing assessment; participating in implementing the health care plan developed by the registered nurse and/or prescribed by any person authorized by State law to prescribe such a plan, by performing tasks delegated by and performed under the supervision or under orders or directions of a registered nurse, physician licensed to practice medicine, dentist, or other person authorized by State law to provide such supervision; reinforcing the teaching and counseling of a registered nurse, physician licensed to practice medicine in North Carolina, or dentist; and reporting and recording the nursing care rendered and the client's response to that care.

Licensed practical nurses may be employed in hospitals, nursing homes, clinics, doctors' offices, industry, and public health agencies.

Individuals desiring a career in practical nursing should be encouraged to take math and science courses in high school.

Job Opportunities

Licensed Practical Nurse

Specific Entrance Requirements

1. General college admission requirements.
2. Three personal references.
3. Reports of medical and dental examinations.
4. The North Carolina State Board of Nursing may deny licensure to individuals *convicted of a felony or any crime involving moral turpitude.*

PRACTICAL NURSING

Diploma

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
PNE	1112	Fundamentals of Nursing	6	2	2	8
PNE	1113	Pharmacology	2	0	0	2
BIO	111	Basic Life Sciences	5	0	0	5
ENG	101	Fundamentals of English	3	0	0	3
NUT	101	Nutrition	3	0	0	3
PSY	101	Introduction to Psychology	3	0	0	3
(PSY	1101	Human Relations)	(3)	(0)	(0)	(3)
			22	2	2	24
Second Quarter (Winter)						
PNE	1120	Clinical I Medical Surgical	0	0	15	5
PNE	1122	Medical Surgical Nursing I	8	0	0	8
PNE	1123	Maternal and Newborn Care	4	0	0	4
PSY	105	Human Growth and Development	3	0	0	3
			15	0	15	20
Third Quarter (Spring)						
PNE	1130	Clinical II Maternal Newborn and Medical Surgical Nursing	0	0	18	6
PNE	1132	Medical Surgical Nursing II	10	0	0	10
PNE	1134	Pediatric Nursing	2	0	0	2
			12	0	18	18
Fourth Quarter (Summer)						
PNE	1140	Clinical III Pediatrics and Medical Surgical Nursing	0	0	18	6
PNE	1142	Medical Surgical Nursing III	10	0	0	10
PNE	1144	Nursing Seminar	2	0	0	2
			12	0	18	18
		Program Totals	61	2	53	80

Selected courses from this program are also offered in the evening schedule. See Evening Program listing.

RADIOLOGIC TECHNOLOGY (RADIOGRAPHY)

The Radiologic Technology curriculum prepares graduates to be competent Medical Radiographers. The radiographer is a skilled person qualified by technological education to provide patient services using imaging modalities (as directed by physicians qualified to order and/or perform radiologic procedures) by: applying knowledge of the principles of radiation protection for the patient, self and others;

applying knowledge of anatomy, positioning and radiographic techniques to accurately demonstrate anatomical structures on a radiograph; determining exposure factors to achieve optimum radiographic technique with a minimum of radiation exposure to the patient; examining radiographs for the purpose of evaluating technique, positioning and other pertinent technical qualities; exercising discretion and judgment in the performance of medical imaging procedures; providing patient care essential to radiologic procedures; and recognizing emergency patient conditions and initiating life saving first aid.

Graduates may be employed in radiology departments in hospitals, clinics, physicians' offices, research and medical laboratories, federal and state agencies and industry.

Graduates are eligible to take the national examination given by the American Registry of Radiologic Technologists for certification and registration as medical radiographers.

Individuals desiring a career in radiologic technology should take courses in biology, algebra and chemistry and/or physics prior to entering the program.

Job Opportunities

Radiologic Technologist
Radiographer

CLINICAL EXPERIENCE

Students in the Radiologic Technology program will receive clinical training at three major hospitals in the area: Memorial Mission Hospital, Saint Joseph's Hospital, and the Veterans Administration Medical Center. Beginning with the second year of the program, students will be assigned to at least one evening rotation at Memorial Mission Hospital during the hours of 4:00 p.m.-11:30 p.m.

Applications accepted into the Radiologic Technology Program must have completed a Community CPR course within the three months prior to the beginning of curriculum classes in the fall. Also, it is strongly recommended that accepted applicants complete the Hepatitis B vaccination series before the beginning of curriculum classes.

Specific Entrance Requirements

1. General college admission requirements.
2. Biology, algebra, physics strongly recommended.
3. Three letters of recommendation.

RADIOLOGIC TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
RAD	100	Introduction to Radiologic Technology	3	0	6	5
RAD	102	Radiographic Technique I	4	0	0	4
RAD	103	Medical Terminology	3	0	0	3
RAD	111	Radiographic Positioning I	3	2	0	4
NUR	125	Nursing Procedures in Radiography	3	2	0	4
			16	4	6	20

Second Quarter (Winter)

RAD	106	Clinical Education I	0	0	15	5
RAD	112	Radiographic Technique II	4	0	0	4
RAD	115	Ethics and Communication in Radiography	3	0	0	3
RAD	121	Radiographic Positioning II	3	2	0	4
BIO	107	Anatomy & Physiology I	4	0	0	4
			14	2	15	20

Third Quarter (Spring)

RAD	114	Clinical Education II	0	0	15	5
RAD	131	Radiographic Positioning III	3	2	0	4
BIO	108	Anatomy and Physiology II	4	0	0	4
PHY	105	Introduction to Physics	4	0	0	4
ENG	101	Fundamentals of English	3	0	0	3
			13	2	15	20

Fourth Quarter (Summer)

RAD	124	Clinical Education III	0	0	15	5
RAD	125	Radiographic Technique III	4	0	0	4
RAD	201	Radiographic Positioning IV	3	2	0	4
ENG	102	Composition	3	0	0	3
			10	2	15	16

Fifth Quarter (Fall)

RAD	134	Clinical Education IV	0	0	24	8
RAD	214	Radiographic Equipment and Quality Assurance	3	2	0	4
RAD	225	Radiobiology & Radiation Protection	4	0	0	4
ENG	103	Report Writing	3	0	0	3
			10	2	24	19

Sixth Quarter (Winter)

RAD	203	Clinical Education V	0	0	24	8
RAD	206	Imaging Modalities	4	0	0	4
RAD	215	Radiographic Pathology	3	0	0	3
ENG	204	Oral Communications	3	0	0	3
			13	0	24	18

Seventh Quarter (Spring)

RAD	212	Clinical Education VI	0	0	24	8
RAD	234	Radiographic Film Evaluation	3	0	0	3
CAS	104	Introduction to Data Processing	2	2	0	3
PSY	101	Introduction to Psychology	3	0	0	3
			9	2	24	17

Eighth Quarter (Summer)

RAD	213	Advanced Radiographic Seminar	4	0	0	4
RAD	223	Clinical Education VII	0	0	24	8
SOC	201	Social Problems	3	0	0	3
			7	0	24	15
		Program Totals	92	14	147	150*

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

BUSINESS AND HOSPITALITY EDUCATION

	Accounting*	Administrative Office Technology*	Banking & Finance
Recommended High School Courses	Keyboarding Accounting Plus any other Business electives	Typewriting/ Keyboarding Computer Appl. Accounting Plus any other Business electives	Keyboarding Accounting Plus any other Business electives
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall Can take single courses any quarter	Day only Begins Fall Can take single courses any quarter	Day/Night Begins Fall Can take single courses any quarter
Degree	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
Employment Opportunities	Accountant Estimator Bookkeeper I	Administrative Assistant Office Mgr. Word Processor Info. Processing Specialist	Acct. Clerk Teller General Clerk Collector Adjuster

Continued on next page

**Tech Prep agreements with regional high schools.*

BUSINESS AND HOSPITALITY EDUCATION

	Business Administration	Business Computer Programming	Culinary Technology
Recommended High School Courses	Keyboarding Accounting Plus any other Business electives	Typewriting/ Keyboarding Algebra II Trigonometry English	Mathematics English Nutrition
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall Can take single courses any quarter	Day/Night Begins Fall Can take single courses any quarter	Day only Begins Fall
Degree	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
Employment Opportunities	Purchasing Agent Sales Mgr. Gen'l Supervisor Operations Officer Loan Officer	Microcomputer Specialist Computer Operator Programmer Systems Analyst	Commis (Apprentice) Legumier (Veg. Cook) Potagier (Soup Cook) Saucier (Sauce Cook) Poissonier (Fish Cook) Boucher (Butcher) Rotisseur (Roast Cook) Boulanger (Baker) Entremetier (Fry Ck) Gardemanger (Cold Meat Cook)

BUSINESS AND HOSPITALITY EDUCATION

	General Office Technology*	Hotel & Restaurant Management	Industrial Management
Recommended High School Courses	Typewriting/ Keyboarding Computer Appl. Accounting Plus any other Business electives	Typewriting/ Keyboarding Mathematics Oral Comm. Composition Home Economics or Food Services Accounting	Keyboarding Accounting Plus any other Business electives
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT). See Placement Testing brochure for full details.	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).
Program Schedule	Day only Begins Fall Can take single courses any quarter	Day only Single courses any quarter day or night	Day/Night Begins Fall Can take single courses any quarter
Degree	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
Employment Opportunities	Business Mach. Operator Data Typist Clerk/Typist Typist Payroll Clerk Receptionist	Management Trainee Restaurant Mgr. Director of Food Services Reservations Manager Front Office Manager Country Club Manager	First-Line Supervisor Production Control Tech. Engineering Assistant Time Study Tech. Methods Tech. Inventory Control Tech.

**Tech Prep agreements with regional high schools.*

Continued on next page

BUSINESS AND HOSPITALITY EDUCATION

	Marketing & Retailing
Recommended High School Courses	Keyboarding Accounting Plus any other Business electives
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall Can take single courses any quarter
Degree	Associate in Applied Science
Employment Opportunities	Display Person General Salesperson Asst. Buyer Trainee Mgr.

BUSINESS AND HOSPITALITY EDUCATION

A.A.S. DEGREE CONFERRED

The following areas of study are included in Business and Hospitality Education.

Accounting
Administrative Office Technology
Banking and Finance
Business Administration
Business Computer Programming
Culinary Technology
General Office Technology
Hotel and Restaurant Management
Industrial Management
Marketing and Retailing

All of the areas of study in the Division of Business and Hospitality Education are seven quarters in duration and will require from twenty to thirty hours per week of course work. If a student elects to enroll in Business Education through the Evening program, the time required for completion will be extended.

CERTIFICATE AWARDED

Real Estate Appraisal
Real Estate Technical Specialty

BUSINESS AND HOSPITALITY EDUCATION PROGRAMS

In North Carolina the opportunities in these programs are increasing. With the increasing population and industrial development in this state, business has become more competitive and automated. Better opportunities will be filled by people with specialized education beyond the high school level. The Business and Hospitality programs are designed to prepare the student for employment in one of many occupations common to business. Programs are aimed at preparing the student in many phases of work that might be encountered.

The Business and Hospitality Education Division offers a flexible approach to meeting individual career objectives. With the assistance of faculty advisors, the student is expected to explore career opportunities available in the business world.

Each student will be assigned an advisor and will be counseled prior to preregistration. The student must have departmental approval of his/her schedule prior to registration.

The A.A.S. degree will be awarded to a student meeting College requirements and completing required courses.

Specific Entrance Requirements for Hospitality Programs

1. General College admission requirements.
2. Must be in acceptable condition of physical and mental health to meet State requirements for food handling certificate.

3. Entry into Hospitality Education programs requires approval of the Department.

In addition to regular classroom work each student will be required to spend additional time on outside work assignments. This will normally be conducted in the summer quarter.

Objectives of Business Programs

The objectives of the Business programs are to develop the following competencies:

1. Understanding of the principles of organization and management in business operations and utilizations of modern methods for adequate decision making.
2. An understanding of our American economic system through the study of macroeconomics; a study and analysis of the role of finance, and of marketing to include product, place, promotion, and price.
3. Knowledge in specific academic and skill areas as indicated by the student's academic choices.
4. Understanding and skill in effective communications for business.
5. Knowledge of human relations as they apply to successful business operations in our economy.

ACCOUNTING

The purpose of the Accounting curriculum is to prepare the individual to enter the accounting profession through study of accounting principles, theories and practices with related study in law, finance, management and data processing operations.

The curriculum is designed to prepare the individual for entry-level accounting positions, such as junior accountant, bookkeeper, accounting clerk, cost clerk, payroll clerk and related data processing occupations.

With experience and additional education, the individual will be able to advance to positions such as systems accountant, cost accountant, budget accountant and property accountant.

Job Opportunities

Entry Level	**Advanced Level**
Accountant	Budget Accountant
Estimator	Cost Accountant
Bookkeeper I	Property Accountant
Bookkeeping-Machine Operator I	Systems Accountant
Accounting Clerk	Bookkeeper II
	Bookkeeping-Machine Operator II

ACCOUNTING

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
AOT	100	Computer Keyboarding	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	110	General College Mathematics	5	0	5
			15	4	17
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
ECO	105	Introduction to Economics	5	0	5
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
PSY	206	Applied Psychology	3	0	3
			17	2	18
Third Quarter (Spring)					
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
AOT	200	Microcomputer Operations	1	3	2
MAT	112	Mathematics of Finance	3	2	4
			10	9	14
Fourth Quarter (Summer)					
BUS	114	Business Law	5	0	5
BUS	122	Accounting III	3	2	4
CAS	10[illegible]	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communication	3	0	3
			13	4	15
Fifth Quarter (Fall)					
BUS	123	Finance	5	0	5
BUS	223	Intermediate Accounting I	5	0	5
BUS	225	Cost Accounting I	5	0	5
			15	0	15
Sixth Quarter (Winter)					
BUS	224	Intermediate Accounting II	3	2	4
BUS	226	Cost Accounting II	3	2	4
BUS	229	Taxes I	3	2	4
BUS	233	Personnel Management and Supervision	3	0	3
ENG	206	Written Communication Skills	3	0	3
			15	6	18
Seventh Quarter (Spring)					
BUS	230	Taxes II	3	2	4
BUS	247	Insurance	5	0	5
BUS	269	Auditing	5	0	5
ENG	103	Report Writing	3	0	3
			16	2	17
		Program Totals	101	27	119*

This program is also offered in the evening schedule. See Evening Programs listing.

*In addition to the previously stated required courses, a minimum of five (credit hours of non-major elective(s) must be taken before graduation.

ADMINISTRATIVE OFFICE TECHNOLOGY

This curriculum prepares individuals to perform secretarial and administrative support duties in a variety of offices including those offices with computerized, automated functions.

Students in this curriculum study keyboarding and word/information processing to develop skills in the preparation of business correspondence, reports, statistical copy, manuscripts, and business forms. Administrative support courses emphasize typical office tasks such as scheduling appointments, composing correspondence, and performing reprographic duties. Training is also provided in analyzing and coordinating office duties and systems. Skills and knowledge are taught in the areas of electronic document storage and retrieval and computer software utilization.

Graduates of the program may be employed in offices in private business establishments involved in retailing, marketing, advertising, and manufacturing as well as offices in local, state, and federal government.

Job Opportunities

- Typist/Transcriber
- Corresponding Secretary
- Electronic Data Transfer Secretary
- Information Processing Specialist
- Receptionist
- Telephone Receptionist/Message Operator
- Secretary
- Word Processing Operator
- Administrative Assistant
- Administrative Office Manager
- Administrative Secretary
- Executive Assistant
- Office Automations Specialist
- Supervisor, Communications
- Training Coordinator
- Word Processing Supervisor/Manager

ADMINISTRATIVE OFFICE TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week Class	Hrs. Per Week Lab	Credit Hrs.
First Quarter (Fall)					
AOT	101	Keyboarding for Office Occupations	2	3	3
AOT	115	Information Processing Concepts	3	0	3
BUS	101	Introduction to Business	3	0	3
ENG	101	Fundamentals of English	3	0	3
MAT	110	General College Mathematics	5	0	5
			16	3	17
Second Quarter (Winter)					
AOT	103	Document Formatting	2	3	3
AOT	125	Text Editing Skills	3	0	3
AOT	200	Microcomputer Operations	1	3	2
BUS	120	Accounting I	3	2	4
ENG	102	Composition	3	0	3
			12	8	15

Third Quarter (Spring)

AOT	105	Document Production	2	3	3
AOT	117	Word Processing	2	3	3
BUS	121	Accounting II	3	2	4
CAS	104	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communications	3	0	3
			12	10	16

Fourth Quarter (Summer)

AOT	112	Speedwriting Shorthand	2	3	3
AOT	120	Personal and Professional Development	3	0	3
AOT	217	Advanced Word Processing	2	3	3
ECO	107	Consumer Economics	3	0	3
ENG	206	Written Communication Skills	3	0	3
			13	6	15

Fifth Quarter (Fall)

AOT	113	Speedwriting Dictation and Transcription	2	3	3
AOT	201	Records Management	3	0	3
BUS	234	Introduction to Management	3	2	4
CAS	203	Data Communications and Networking	2	2	3
ENG	103	Report Writing	3	0	3
			13	7	16

Sixth Quarter (Winter)

AOT	114	Advanced Speedwriting for the Automated Office	2	3	3
AOT	208	Administrative Support Systems and Procedures I	3	2	4
AOT	230	Office Supervision	3	0	3
OTC	214	Machine Transcription	2	3	3
BUS	114	Business Law	5	0	5
			15	8	18

Seventh Quarter (Spring)

AOT	202	Software Management for Administrative Support	1	2	2
AOT	209	Administrative Support Systems and Procedures II	3	2	4
AOT	218	Desktop Publishing	2	2	3
AOT	220	Office Skills Reinforcement	2	3	3
AOT	250	Office Systems and Technology Management	1	3	2
PSY	206	Applied Psychology	3	0	3
			12	12	17
		Program Totals	93	54	119*

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

Credits toward the A.A.S. degree in Administrative Office Technology may be given to persons holding the Certified Professional Secretary rating. If interested, those holding this certification should contact the Chairperson, Department of Office Education. Persons interested in becoming a candidate for the certification can obtain information from the Institute for Certifying Secretaries, 2440 Pershing Road, Suite 6, 10 Crown Center, Kansas City, Missouri 64108.

*Credits toward the A.A.S. degree in Administrative Office Technology may be given to persons holding the Professional Legal Secretary rating. If interested, those holding this certification should contact the Chairperson, Department of Office Education. Persons interested in becoming a candidate for the certification can obtain information from the National Association of Legal Secretaries (International), Administrative Offices, 3005 East Skelly Drive, Suite 120, Tulsa, Oklahoma 74105.

Selected courses from this program are also offered in the evening schedule. See the Evening Program listing.

BANKING AND FINANCE

The purposes of the Banking and Finance curriculum are: to prepare the individual to enter the banking and finance industries, to provide an educational program for banking employees wanting to receive the American Institute of Banking certificate, and to provide an educational program to upgrade or retrain individuals presently employed in the banking or finance industry.

These purposes will be fulfilled through study in areas such as banking and finance principles, theories and practices; teller operations; lending and collections procedures; financial analysis; marketing and public relations.

This curriculum will provide the opportunity for an individual to enter a variety of banking or finance jobs in retail banks, commercial banks, government lending agencies, mortgage banks, and credit companies.

Job Opportunities

Entry Level
Accounting Clerk
Teller
General Clerk
Collector and Adjuster

Advanced Level
Branch Manager
Departmental Manager, Advertising
Departmental Manager, Budget
Departmental Manager, Personnel and Training
Banking and Staff Assistant

BANKING AND FINANCE

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
AOT	100	Computer Keyboarding	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	110	General College Mathematics	5	0	5
			15	4	17

Second Quarter (Winter)

BUS	121	Accounting II	3	2	4
ECO	105	Introduction to Economics	5	0	5
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
PSY	206	Applied Psychology	3	0	3
			17	2	18

Third Quarter (Spring)

BUS	125	Introduction to Banking Fundamentals	4	0	4
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
AOT	200	Microcomputer Operations	1	3	2
MAT	112	Mathematics of Finance	3	2	4
			14	9	18

Fourth Quarter (Summer)

BUS	114	Business Law	5	0	5
BUS	122	Accounting III	3	2	4
CAS	104	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communications	3	0	3
			13	4	15

Fifth Quarter (Fall)

BUS	123	Finance	5	0	5
BUS	207	Principles of Bank Operations	5	0	5
BUS	238	Consumer Behavior	5	0	5
			15	0	15

Sixth Quarter (Winter)

Bus	206	Banking and Finance Credit	3	2	4
BUS	229	Taxes I	3	2	4
BUS	233	Personnel Management and Supervision	3	0	3
ENG	206	Written Communication Skills	3	0	3
			12	4	14

Seventh Quarter (Spring)

BUS	208	Financial Statements Analysis	5	0	5
BUS	247	Insurance	5	0	5
BUS	248	Marketing Research	3	2	4
ENG	103	Report Writing	3	0	3
			16	2	17
		Program Totals	103	24	119*

This program is also offered in the evening schedule. See Evening Programs listing.

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

BUSINESS ADMINISTRATION

The Business Administration curriculum is designed to prepare an individual for entry into middle-management occupations in various businesses and industries. The curriculum provides an overview of the business and industrial world...its organization and management.

The purpose of the curriculum will be fulfilled through courses designed to develop competency in: understanding the principles of organization and management in business operations, utilizing modern techniques to make decisions, understanding the economy through study and analysis of the role of production and marketing, communicating orally and in writing, and interpersonal relationships.

Through these skills and through development of personal competencies and qualities, the individual will be able to function effectively in middle-management activities in business or industry.

Job Opportunities

Entry Level
Purchasing Agent
Sales Manager
Public-Relations Representative
Sales-Service Promoter
Training Representative
General Supervisor
Credit Card Operations Manager
Operations Officer
Loan Officer
Volunteer Services Supervisor
Customer Services Manager
Residence Supervisor

Advanced Level
Personnel Manager
Credit & Collection Manager
Customer Service Manager
Branch Manager
Production Superintendent
Traffic Manager
Credit Union Manager
Housing Project Manager
Market Manager
Loan Counselor
Office Manager
Department Manager
Warehouse Manager

BUSINESS ADMINISTRATION

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
AOT	100	Computer Keyboarding	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	110	General College Mathematics	5	0	5
			15	4	17
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
ECO	105	Introduction to Economics	5	0	5
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
PSY	206	Applied Psychology	3	0	3
			17	2	18
Third Quarter (Spring)					
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
AOT	200	Microcomputer Operations	1	3	2
MAT	112	Mathematics of Finance	3	2	4
			10	9	14
Fourth Quarter (Summer)					
BUS	114	Business Law	5	0	5
CAS	104	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communications	3	0	3
			10	2	11

Fifth Quarter (Fall)

BUS	123	Finance	5	0	5
BUS	235	Business Organization and Management	3	2	4
BUS	238	Consumer Behavior	5	0	5
			13	2	14

Sixth Quarter (Winter)

BUS	206	Banking and Finance Credit	3	2	4
BUS	229	Taxes I	3	2	4
BUS	233	Personnel Management and Supervision	3	0	3
ENG	206	Written Communication Skills	3	0	3
			12	4	14

Seventh Quarter (Spring)

BUS	247	Insurance	5	0	5
ENG	103	Report Writing	3	0	3
			8	0	8
		Program Totals	85	23	119*

This program is also offered in the evening schedule. See Evening Programs listing.

*Business Administration students must take a minimum of 18 additional credit hours of business and support courses to be selected with the faculty advisor. These major course electives must be selected from the following list:

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
BUS	122	Accounting III	3	2	4
BUS	125	Introduction to Banking Fundamentals	4	0	4
BUS	164	Real Estate Law	3	0	3
BUS	165	Real Estate Brokerage Operations	3	0	3
BUS	200	Purchasing	4	0	4
BUS	208	Financial Statements Analysis	5	0	5
BUS	209	Real Estate Finance	3	0	3
BUS	222	Control Accounting	3	2	4
BUS	225	Cost Accounting I	5	0	5
BUS	236	Small Business Management	3	0	3
BUS	237	Advertising	5	0	5
BUS	240	Channels of Distribution	5	0	5
BUS	241	Retailing	3	0	3
BUS	243	International Marketing	3	0	3
BUS	249	Inventory Control	3	0	3
BUS	266	Professional Sales Techniques	3	2	4
BUS	296	Real Estate Fundamentals for Salespersons	6	0	6
ECO	107	Consumer Economics	3	0	3

In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

BUSINESS COMPUTER PROGRAMMING

The primary objective of the Business Computer Programming curriculum is to prepare individuals for gainful employment as computer programmers. The objective is fulfilled through study and application in areas such as computer and systems theories and concepts, data processing techniques, business operations, logic, flow charting, programming procedures and languages and types, uses and operation of equipment.

Entry-level jobs as computer programmer and computer programmer trainee are available. With experience and additional education, the individual may enter jobs such as data processing manager, computer programmer manager, systems analyst, and systems manager.

Job Opportunities

Entry Level
Computer Programmer
Computer Programmer Trainee
Information Systems Programmer
Process Control Programmer
Detail Programmer

Advanced Level
Data Processing Manager/Supervisor
Computer Operations Manager/Supervisor
Chief Business Programmer
Data Processing Programmer/Analyst

Computing Facilities

Students in the Business Computer Programming Department have hands-on access to an IBM AS/400, E10 Minicomputer, a Novell network with 75 workstations and a multimedia PC. Programming languages include C, COBOL, RPG and BASIC. Software Packages supported by the department include: Lotus 123, DBase IV, MicroSoft Works, Harvard Graphics, Brief Case, and other popular applications. Both DOS-based and GUI operating environments are supported in BCP computer labs.

BUSINESS COMPUTER PROGRAMMING

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
CAS	104	Introduction to Business Data Processing	2	2	3
BUS	101	Introduction to Business	3	0	3
ENG	100	Reading Comprehension	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
			14	4	16
Second Quarter (Winter)					
CSC	107	Operating Systems	3	2	4
CSC	208	Programming: Basic	2	2	3
CSC	115	Program Design and Development	4	0	4
BUS	120	Accounting I	3	2	4
AOT	100	Computer Keyboarding	1	2	2
			13	8	17
Third Quarter (Spring)					
CAS	200	Introduction to Microcomputers	2	2	3
CSC	222	C Programming	2	2	3
BUS	121	Accounting II	3	2	4
MAT	102	Algebra and Trigonometry II	5	0	5
PSY	206	Applied Psychology	3	0	3
			15	6	18
Fourth Quarter (Summer)					
CAS	201	Advanced Microcomputer Applications	2	2	3
ECO	102	Economics	3	0	3
ENG	102	Composition	3	0	3
MAT	160	Elementary Statistics	5	0	5
MAT	112	Mathematics of Finance	3	2	4
			16	4	18

Fifth Quarter (Fall)

CAS	203	Data Communications and Networking	2	2	3
CSC	218	Programming I - RPG II	4	0	4
CSC	219	Programming II - RPG II	1	3	2
BUS	222	Control Accounting	3	2	4
ENG	204	Oral Communications	3	0	3
			13	7	16

Sixth Quarter (Winter)

CAS	118	Database Management Concepts	3	2	4
CSC	215	Programming I - COBOL	4	0	4
CSC	216	Programming II - COBOL	1	3	2
CAS	220	Systems Analysis and Design	2	3	3
			10	8	13

Seventh Quarter (Spring)

CAS	160	Computer Operations	2	2	3
CAS	221	Advanced Projects	1	3	2
BUS	234	Introduction to Management	3	2	4
ENG	103	Report Writing	3	0	3
			9	7	12
		Program Totals	90	44	115*

This program is also offered in the evening schedule. See Evening Programs listing.

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

CULINARY TECHNOLOGY

The Culinary Technology curriculum is designed to provide the student with the knowledge and skills to become a chef. This is accomplished through a combination of course work, in-house observation, laboratory practice, and supervised work experience in the field.

Food preparation, food cost control, purchasing, beverage cost control, and menu planning are typical subjects. The student will also take courses in convenience foods, gardemanger, and sanitation, as well as courses in accounting, personal management, human relations, composition, and oral communications.

Graduates may find employment in the fine hotels, gourmet restaurants, private clubs, and for steamship lines. The graduate would typically be engaged in a progression of positions, from commis to station chef and sous chef, culminating in the position of executive chef and beyond.

Job Opportunities

Entry Level

Commis (Apprentice):
- Legumier (Vegetable Cook)
- Potagier (Soup Cook)
- Saucier (Sauce Cook)
- Poissonier (Fish Cook)
- Boucher (Butcher)
- Rotisseur (Roast Cook)
- Boulanger (Baker)
- Entremetier (Fry Cook)
- Gardemanger (Cold Meat Cook)

Advanced Level

Chef:
- Legumier (Vegetable Cook)
- Potagier (Soup Cook)
- Saucier (Sauce Cook)
- Poissonier (Fish Cook)
- Boucher (Butcher)
- Rotisseur (Roast Cook)
- Boulanger (Baker)
- Entremetier (Fry Cook)
- Gardemanger (Cold Meat Cook)
- Sous Chef (Assistant)
- Executive Chef
- Certified Executive Chef
- Master Chef

CULINARY TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week			Credit
			Class	Lab	Lab	Hrs.
First Quarter (Fall)						
CSP	101	Food Preparation I	2	0	9	5
CSP	107	Food Service Equipment	1	2	0	2
HRM	101	Hospitality Orientation	3	0	0	3
HRM	213	Food Service Sanitation	3	0	0	3
MAT	110	General College Mathematics	5	0	0	5
			14	2	9	18
Second Quarter (Winter)						
CSP	103	Food Preparation II	2	2	9	6
CSP	109	International Cuisine	2	2	0	3
HRM	104	Food Purchasing I	3	0	0	3
HRM	108	Food Cost Control	3	0	0	3
ENG	101	Fundamentals of English	3	0	0	3
			13	4	9	18

Third Quarter (Spring)

CSP	106	Food Preparation III	3	2	9	7
HRM	109	Food Purchasing II	3	0	0	3
HRM	211	Menu Engineering	3	0	0	3
NUT	100	Nutrition: Culinary	3	0	0	3
ENG	206	Written Communication Skills	3	0	0	3
			15	2	9	19

Fourth Quarter (Summer)

CSP	110	Supervised Work Experience	0	0	40	4
			0	0	40	4

Fifth Quarter (Fall)

CSP	114	Gardemanger	2	0	3	3
CSP	201	Food Preparation IV	3	0	9	6
CSP	203	Dining Room	1	2	0	2
CAS	104	Introduction to Business Data Processing	2	2	0	3
			8	4	12	14

Sixth Quarter (Winter)

CSP	210	Food Preparation V	3	0	9	6
CSP	215	Classical Food Preparation	2	0	3	3
HRM	215	Beverage Cost Control	3	2	0	4
SOC	201	Social Problems	3	0	0	3
ENG	102	Composition	3	0	0	3
			14	2	12	19

Seventh Quarter (Spring)

CSP	211	Food Preparation VI	2	0	12	6
CSP	214	Wine Appreciation	0	2	0	1
HRM	209	Hospitality Personnel Management	3	0	0	3
ENG	204	Oral Communications	3	0	0	3
PSY	206	Applied Psychology	3	0	0	3
			11	2	12	16

Program Totals	75	16	103	111*

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*In addition to the previously stated required courses, a minimum of three (3) credit hours of non-major elective(s) must be taken before graduation.

Selected courses from this program are also offered in the evening schedule.

GENERAL OFFICE TECHNOLOGY

The purposes of the General Office Technology curriculum are to (1) prepare the individual to enter clerical office occupations, (2) provide an educational program for individuals wanting education for upgrading (moving from one position to another) or retraining (moving from present position to a clerical position), and (3) provide an opportunity for individuals wanting to fulfill professional or general interest needs.

These purposes will be fulfilled through skill development in the areas of typewriting, filing, and business machines. Through these skills and through development of personal competencies and qualities, the individual will be able to function effectively in office-related activities.

Job Opportunities

Entry Level

Business Machine Operator
Data Typist
Clerk-Typist
Typist
Payroll Clerk
File Clerk I
General Office Clerk
Posting Clerk
General Clerk
Appointment Clerk
Receptionist

Advanced Level

Transcribing Machine
 Operator Supervisor
Duplicating Machine
 Operator III
Automatic Typewriter
 Operator
File Clerk II
Billing Typist
Accounting Clerk
Correspondence Clerk
Administrative Clerk
Personnel Clerk

GENERAL OFFICE TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
AOT	101	Keyboarding for Office Occupations	2	3	3
AOT	115	Information Processing Concepts	3	0	3
ENG	111	Grammar	5	0	5
MAT	110	General College Mathematics	5	0	5
			15	3	16
Second Quarter (Winter)					
AOT	103	Document Formatting	2	3	3
AOT	200	Microcomputer Operations	1	3	2
BUS	100	Contemporary Business	3	0	3
ENG	102	Composition	3	0	3
PSY	206	Applied Psychology	3	0	3
			12	6	14
Third Quarter (Spring)					
OTC	100	Spelling and Punctuation Study	3	0	3
AOT	117	Word Processing	2	3	3
AOT	105	Document Production	2	3	3
BUS	117	Clerical Accounting I	5	2	6
CAS	104	Introduction to Business Data Processing	2	2	3
			14	10	18

Fourth Quarter (Summer)

AOT	120	Personal and Professional Development	3	0	3
AOT	217	Advanced Word Processing	2	3	3
AOT	218	Desktop Publishing	2	2	3
BUS	118	Clerical Accounting II	5	2	6
ECO	108	Consumer Economics	5	0	5
			17	7	20

Fifth Quarter (Fall)

OTC	110	Practical Office English	5	0	5
OTC	272	Vocabulary Building	2	0	2
AOT	201	Records Management	3	0	3
AOT	250	Office Systems and Technology Management	1	3	2
CAS	203	Data Communications and Networking	2	2	3
ENG	206	Written Communication Skills	3	0	3
			16	5	18

Sixth Quarter (Winter)

OTC	214	Machine Transcription	2	3	3
OTC	216	Payroll Procedures	3	2	4
AOT	208	Administrative Support Systems and Procedures I	3	2	4
ENG	103	Report Writing	3	0	3
ENG	204	Oral Communications	3	0	3
			14	7	17

Seventh Quarter (Spring)

++OTC	218	Cooperative Education	0	20	2
			0	20	2
		Program Totals	88	58	110*

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

*The following substitutions may be made ECO 108-ECO 105; ENG 111-ENG 101; BUS 117-BUS 120; BUS 118- BUS 121.

AOT courses with similar course titles, and subject content may be substituted for OTC courses with department chairperson's permission.

++Subject to departmental guidelines, appropriate work experience may be used in lieu of OTC 218.

Selected courses from this program are also offered in the evening schedule.

HOTEL AND RESTAURANT MANAGEMENT

The Hotel and Restaurant Management curriculum trains students to work as supervisory and management personnel in hotels, restaurants, and clubs. Areas of study include front-office management, accounting, sales promotion, food and beverage control, personnel management, food preparation and service. The internship program is also provided to enable the student to acquire experience under the direction of a qualified manager and college supervisor.

The graduate has an opportunity for employment with airlines, colleges, schools, convalescent homes, government services, hospitals, hotels, clubs, and restaurants.

Job Opportunities

Entry Level

- Cashier, Front Office
- Food and Beverage Checker
- Hotel Cashier, General
- Kitchen Steward
- Night Auditor
- Housekeeping Supervisor

Advanced Level

- Food Buyer
- Director, Food Services
- Executive Housekeeper
- Food and Beverage Controller
- Food Service Supervisor
- Housekeeper
- Manager, Cafeteria
- Manager, Catering
- Manager, Front Office
- Manager, Lodging Facilities
- Manager, Reservations
- Sales Representative, Hotel and Restaurant Equipment and Supplies
- Sales Representative, Hotel Services
- Supervisor, Cashier and Food Checker

MOUNTAIN TECH LODGE

An on-campus motor lodge, Mountain Tech Lodge, operated and maintained by the students provides practical experience under the direction of college faculty.

HOTEL AND RESTAURANT MANAGEMENT

Associate in Applied Science Degree

			Hrs. Per Week			Credit
			Class	Lab	Lab	Hrs.
First Quarter (Fall)						
HRM	101	Hospitality Orientation	3	0	0	3
HRM	213	Food Service Sanitation	3	0	0	3
CSP	101	Food Preparation I	2	0	9	5
CSP	107	Food Service Equipment	1	2	0	2
MAT	110	General College Mathematics	5	0	0	5
			14	2	9	18

Second Quarter (Winter)						
HRM	104	Food Purchasing I	3	0	0	3
HRM	108	Food Cost Control	3	0	0	3
CSP	102	HRM Food Preparation II	3	0	6	5
AOT	100	Computer Keyboarding	1	2	0	2
BUS	120	Accounting I	3	2	0	4
			13	4	6	17
Third Quarter (Spring)						
HRM	106	Front Office Procedures	5	2	0	6
HRM	109	Food Purchasing II	3	0	0	3
HRM	218	Dining Room Management	3	0	0	3
CSP	104	HRM Food Preparation III	3	0	6	5
ENG	101	Fundamentals of English	3	0	0	3
			17	2	6	20
Fourth Quarter (Summer)						
HRM	110	Supervised Work Experience	2	0	40	6
			2	0	40	6
Fifth Quarter (Fall)						
HRM	204	Hotel Information Systems	2	2	0	3
HRM	207	Laws of Innkeeping	6	0	0	6
HRM	208	Supervisory Housekeeping	3	2	0	4
HRM	211	Menu Engineering	3	0	0	3
ENG	204	Oral Communications	3	0	0	3
			17	4	0	19
Sixth Quarter (Winter)						
HRM	205	Hospitality Management	4	2	0	5
HRM	215	Beverage Cost Control	3	2	0	4
SOC	201	Social Problems	3	0	0	3
ENG	102	Composition	3	0	0	3
			13	4	0	15
Seventh Quarter (Spring)						
HRM	209	Hospitality Personnel Management	3	0	0	3
HRM	212	Sales Promotion	2	2	0	3
HRM	219	Advanced Hospitality Management	2	4	0	4
ENG	206	Written Communication Skills	3	0	0	3
PSY	206	Applied Psychology	3	0	0	3
			13	6	0	16
		Program Totals	89	22	61	114*

*In addition to the previously stated required courses, a minimum of three (3) credit hours of non-major elective(s) must be taken before graduation.

Selected courses from this program are also offered in the evening schedule.

INDUSTRIAL MANAGEMENT TECHNOLOGY

The Industrial Management curriculum is designed to provide an individual with the ability to function effectively in supervisory and middle-management positions in industry. This program emphasizes study and application in areas such as business and industrial management, production methods and schedules, inventory control, work analysis, motivation techniques, and human relations.

This curriculum is designed to prepare the individual to enter supervisory or middle-management positions, to provide an educational program for upgrading or retraining, and to provide an opportunity for the individual wanting to fulfill professional or general interest needs.

Job Opportunities

Entry Level	**Advanced Level**
First-Line Supervisor	Plant Manager
Production Control Technician	Production Control Manager
Engineering Assistant	Materials Manager
Time Study Technician	Personnel Manager
Methods Technician	Quality Control Manager
Inventory Control Technician	
Shipping Supervisor	
Quality Control Technician	

INDUSTRIAL MANAGEMENT

Associate in Applied Science Degree

			Hrs. Per Week		**Credit**
			Class	**Lab**	**Hrs.**
First Quarter (Fall)					
BUS	120	Accounting I	3	2	4
AOT	100	Computer Keyboarding	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	110	General College Mathematics	5	0	5
		ELECTIVE			
			12	4	14
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
ECO	105	Introduction to Economics	5	0	5
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
PSY	206	Applied Psychology	3	0	3
			17	2	18
Third Quarter (Spring)					
ISC	102	Industrial Safety	3	0	3
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
MAT	160	Elementary Statistics	5	0	5
		ELECTIVE			
			14	4	16

Fourth Quarter (Summer)

ISC	105	Introduction to Production	5	0	5
BUS	114	Business Law	5	0	5
CAS	104	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communications	3	0	3
			15	2	16

Fifth Quarter (Fall)

ISC	211	Time Study-Work Measurement	3	2	4
BUS	200	Purchasing	4	0	4
BUS	225	Cost Accounting I	5	0	5
BUS	249	Inventory Control	3	0	3
			15	2	16

Sixth Quarter (Winter)

ISC	202	Quality Control	3	2	4
ISC	209	Plant Layout	1	4	3
BUS	233	Personnel Management and Supervision	3	0	3
ENG	206	Written Communication Skills	3	0	3
			10	6	13

Seventh Quarter (Spring)

BUS	235	Business Organization and Management	3	2	4
BUS	247	Insurance	5	0	5
ENG	103	Report Writing	3	0	3
			11	2	12
		Program Totals	94	22	111*

*In addition to the previously stated required courses, a minimum of six (6) credit hours of non-major elective(s) must be taken before graduation.

This program is also offered in the evening schedule. See Evening Programs listing.

MARKETING AND RETAILING

The Marketing and Retailing curriculum is designed to prepare the individual for entry into middle-management positions in various marketing and retailing businesses and industries. This purpose will be fulfilled through study and application in areas such as marketing and merchandising techniques, management, selling, advertising, retailing, and credit and collection procedures.

Through knowledge and skills the individual will be able to perform marketing and distribution activities and through the development of personal competencies and qualities will be provided the opportunity to enter an array of marketing and distribution jobs.

Job Opportunities

Entry Level
- Display Person
- General Salesperson
- Assistant Buyer
- Junior Executive
- Trainee Manager

Advanced Level
- Advertising Manager
- Display Manager
- Store Manager I
- Buyer I
- Department Manager
- Merchandising Manager

MARKETING AND RETAILING

Associate in Applied Science Degree

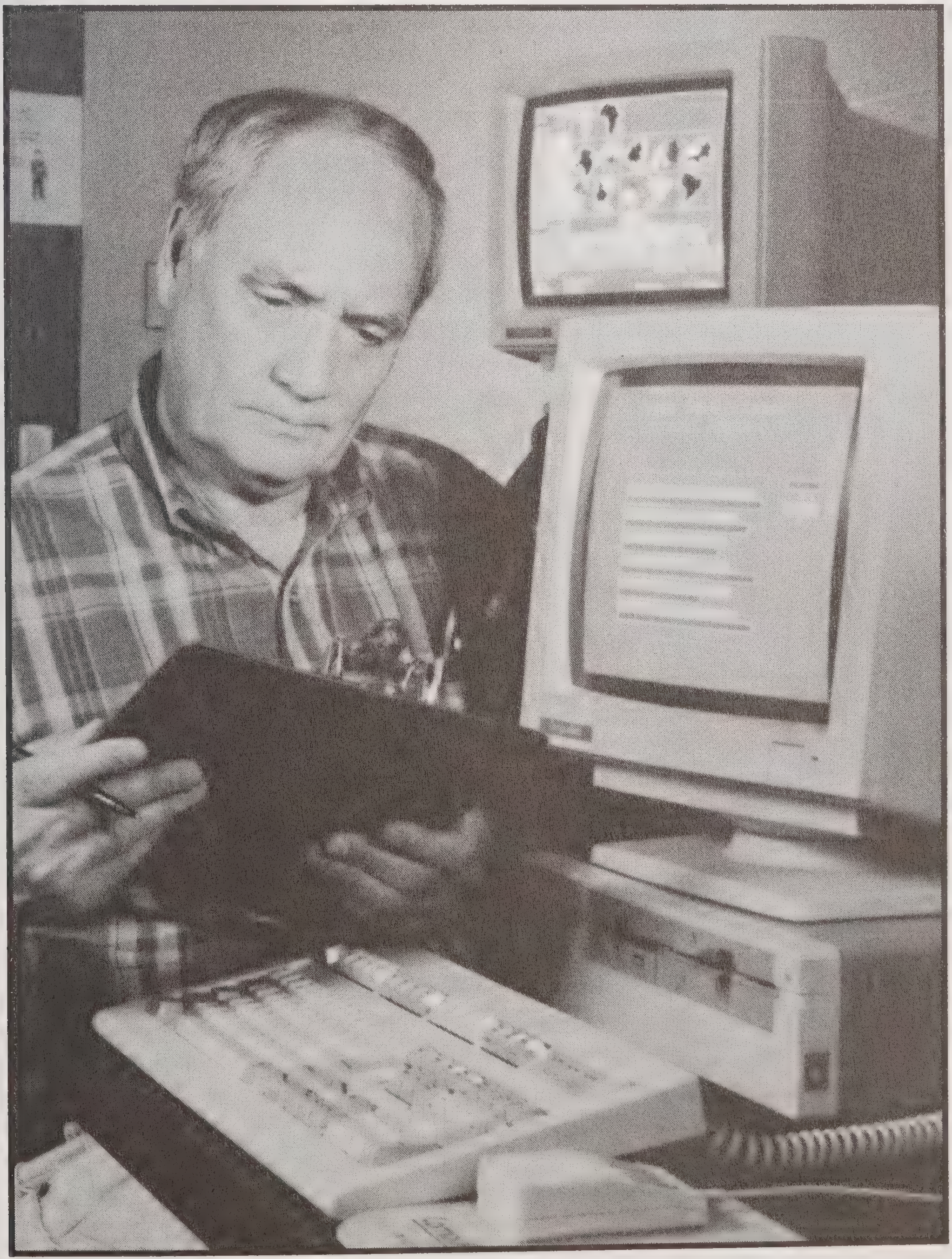
			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
AOT	100	Computer Keyboarding	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	110	General College Mathematics	5	0	5
			15	4	17
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
ECO	105	Introduction to Economics	5	0	5
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
PSY	206	Applied Psychology	3	0	3
			17	2	18
Third Quarter (Spring)					
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
AOT	200	Microcomputer Operations	1	3	2
MAT	112	Mathematics of Finance	3	2	4
			10	9	14
Fourth Quarter (Summer)					
BUS	114	Business Law	5	0	5
BUS	243	International Marketing	3	0	3
CAS	104	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communication	3	0	3
			13	2	14
Fifth Quarter (Fall)					
BUS	123	Finance	5	0	5
BUS	237	Advertising	5	0	5
BUS	238	Consumer Behavior	5	0	5
			15	0	15
Sixth Quarter (Winter)					
BUS	229	Taxes I	3	2	4
BUS	233	Personnel Management and Supervision	3	0	3
BUS	241	Retailing	3	0	3
BUS	266	Professional Sales Techniques	3	2	4
ENG	206	Written Communication Skills	3	0	3
			15	4	17

Seventh Quarter (Spring)

BUS	206	Banking and Finance Credit	3	2	4
BUS	247	Insurance	5	0	5
BUS	248	Marketing Research	3	2	4
ENG	103	Report Writing	3	0	3
			14	4	16
		Program Totals	99	25	116*

* in addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

This program is also offered in the evening schedule. See Evening Programs listing.



Everyone needs high-tech computer training.

ENGINEERING AND APPLIED TECHNOLOGY

	Air Conditioning, Heating, and Refrigeration	Automotive Mechanics*	Automotive Service Technician
Recommended High School Courses	Electricity Electronics	Applied Mathematics Electronics	Physics
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Mathematics (2 units, including Algebra) Acceptable scores on SAT, ACT, or Reading Comprehension, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall Can take some single courses any quarter.	Night Begins Fall	Day Begins Winter 1993 Begins Fall 1994
Degree	Diploma	Diploma	Associate in Applied Science
Employment Opportunities	Maint. Tech. Climate Control Technician Service Tech. Systems Eng. Refrigeration Tech Estimator	Positions with Automotive Dealerships and Independent Shops Auto Machine Shop	General Automotive Technician Specialized Technician Shop Supervisor

**Tech Prep agreements with regional high schools.*

ENGINEERING AND APPLIED TECHNOLOGY

	Carpentry & Cabinetmaking	Civil Engineering Technology	Diesel Vehicle Maintenance
Recommended High School Courses	Applied Mathematics Drafting Woodworking Courses	Trigonometry Drafting	Applied Mathematics Electronics Electricity
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall	Day Begins Fall Night Begins in odd numbered years Can take single courses any quarter	Day Only Begins Fall
Degree	Diploma	Associate in Applied Science	Diploma
Employment Opportunities	For Contractors as Carpenters or Estimators In Cabinet Shop as Cabinetmakers	Construction Technician Materials Testing Technician Construction Inspector Engineering Tech.	Diesel Mech. Fuel Injection Servicer Repairer, Heavy Tractor Mech. Helper

**Tech Prep agreements with regional high schools.*

Continued on next page

ENGINEERING AND APPLIED TECHNOLOGY

	Drafting & Design Engineering Technology*	Electronics Engineering Technology*	Electronic Servicing
Recommended High School Courses	Drafting	Trigonometry	Technical Math Algebra I
A-B Tech Entrance Requirements	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).
Program Schedule	Day Begins Fall Night Begins in odd numbered years only	Day/Night Begins Fall	Night Begins Fall
Award	Associate in Applied Science	Associate in Applied Science	Diploma
Employment Opportunities	Mech. Design Product Design Mfg. Design	Special Projects Engineer Electronics Maint. Tech. Control Systems	Install and Service Radio, TV, Audio/Video, Entertainment, Digital Systems, Cable Components and Systems

ENGINEERING AND APPLIED TECHNOLOGY

	Machinist	Mechanical Engineering Technology	Surveying Technology
Recommended High School Courses	Applied Mathematics Drafting or Blueprint Reading	Trigonometry Physics	Trigonometry Drafting
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall Will also offer afternoon schedule on demand.	Day Begins Fall Night Begins in even numbered years Can take single courses any quarter.	Day Begins Fall Night Begins in odd numbered years Can take single courses any quarter.
Degree	Diploma	Associate in Applied Science	Associate in Applied Science
Employment Opportunities	For Manufacturers as Machinist Machine or CNC Set-Up Operator Quality Control Technician	Mfg. Engineer Quality Control Technician Mechanical Designer Maintenance Engineering Technician Controls Engineering Technician	Construction Layout Tech. Land Surveyor Mapping

Continued on next page

ENGINEERING AND APPLIED TECHNOLOGY

	Tool Design Technology*	Tool, Die and Mold Making	Welding
Recommended High School Courses	Drafting	Applied Mathematics Geometry Trigonometry	Applied Mathematics Blueprint Reading Drafting
A-B Tech Entrance Requirements	Reading Comprehension, Sentence and Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Successful Completion of the Machinist Program with grade of "B" or better in certain MES and MAT courses	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).
Program Schedule	Day Begins Fall Night Begins in even numbered years Can take single courses any quarter	Day Begins Fall Night Begins in even years only	Day/Night Begins Fall Can take single courses any quarter.
Degree	Associate in Applied Science	Technical Diploma	Diploma
Employment Opportunities	Tooling Detailer Tool Designer Mfg. Design CNC Programming	Positions with Tool, Die, and Moldmaking Shops	Arc Welder Arc Welder-Mach. Operator Gas Welder-Mach. Operator Combination Welder

**Offered only as a certificate program in 1993-1994.*

ENGINEERING AND APPLIED TECHNOLOGY

A.A.S. DEGREE CONFERRED

The following areas of study are included in Engineering and Applied Technology:

Automotive Service Technician
Civil Engineering Technology
Electronics Engineering Technology
Drafting and Design Engineering Technology
Mechanical Engineering Technology
Surveying Technology
*Tool Design Technology

DIPLOMA AWARDED

Air Conditioning, Heating, and Refrigeration
Automotive Mechanics
Carpentry and Cabinetmaking
Diesel Vehicle Maintenance
Electronic Servicing
Machinist
Tool, Die and Mold Making
Welding

CERTIFICATE AWARDED

Tool Design Technology

The Engineering and Applied Technology division offers a variety of Associate in Applied Science degree programs in engineering technologies and diploma programs in applied technologies. Most programs are available on a day and evening basis.

Students enrolled in this division are provided an appropriate mix of theory and hands-on applications. Students in the diploma programs spend much of their time working under industrial shop conditions. Modern facilities include well-equipped laboratories and shops to support goals of the programs. Emphasis is placed on student proficiency in the use of procedures, equipment, and instruments related to the specific program area. Appropriate related and general education courses support these applied programs.

SPECIFIC ENTRANCE REQUIREMENTS FOR ENGINEERING AND APPLIED TECHNOLOGY

1. General college admission requirements.

FURTHER ENTRANCE REQUIREMENTS FOR ENGINEERING TECHNOLOGY STUDENTS

2. Have high school credit for two units of math, one of which is in algebra and the other in algebra II, plane geometry, or equivalent. (For Automotive Service Technician-any unit math .) Students must have and maintain a valid driver's license throughout the program.
3. It is recommended that the candidate should have completed a unit of science beyond general science, such as physics or chemistry.

AIR CONDITIONING, HEATING, AND REFRIGERATION

The Air Conditioning, Heating, and Refrigeration curriculum is designed to teach knowledge and skills necessary for servicing and installing residential and light commercial climate control equipment. Instruction will include heating and cooling theory, applied electricity and electronics, and the operating principles for a wide-range of heating and cooling equipment. The diploma program will emphasize start-up and service skills for oil, gas, and electric furnaces, air-cooled air conditioning and air-to-air heat pumps.

Advanced diploma level programs will provide for more in-depth study and experience and will also include service and installation of water-cooled air conditioners, water source heat pumps, variable speed heat pumps, conventional hydronic systems, and residential and light commercial system design.

Job Opportunities

Entry Level

Air Conditioning Mechanic	Heating Mechanic
Heating and Air Conditioning Mechanic	HVAC Service Technician

AIR CONDITIONING, HEATING AND REFRIGERATION

Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
AHR	1123	Principles of Air Conditioning	3	0	9	6
AHR	1124	Principles of Heating: Fuels and Burners	2	0	6	4
ELC	1117	Basic Electricity	3	2	0	4
ENG	100	Reading Comprehension	1	2	0	2
WLD	1101	Basic Welding	1	2	0	2
			10	6	15	18

Second Quarter (Winter)

AHR	1121	Fundamentals of Refrigeration: Domestic	3	0	12	7
BPR	1116	Blueprint Reading: Air Conditioning	2	2	0	3
ELC	1118	Applied Electricity	3	2	0	4
ENG	1102	Communication Skills	3	0	0	3
MAT	1101	Fundamentals of Mathematics	5	0	0	5
			16	4	12	22

Third Quarter (Spring)

AHR	1122	Fundamentals of Refrigeration: Commercial	3	0	12	7
ELN	105	Industrial Electronics	1	0	3	2
MAT	1103	Geometry	3	0	0	3
PSY	1101	Human Relations	3	0	0	3
			10	0	15	15

Fourth Quarter (Summer)

AHR	1126	All Year Comfort Systems and A.C. Servicing	2	0	9	5
AHR	1127	Duct Construction and Maintenance	2	0	6	4
BUS	1103	Small Business Operations	3	0	0	3
PHY	1101	Applied Science I	3	2	0	4
			10	2	15	16
		Program Totals	46	12	57	71

This program is also offered in the evening schedule. See Evening Programs listing.

AUTOMOTIVE SERVICE TECHNICIAN

The Automotive Service Technician curriculum is comprised of cooperative education training and related classroom instruction. Instruction is organized and systematic, designed to provide the student with knowledge of theoretical, technical, and general academic subjects related to the trade of the automotive technician.

The cooperative work phase of the program requires students to be employed full-time in supervised automotive mechanic positions to receive on-the-job experience. The cooperative work phase will be supervised and evaluated.

Job Opportunities

Entry Level
General Mechanic
Tune-up Mechanic
Front-end Specialist
Automatic Transmission
Brake Specialist

Advanced Level
Shop Supervisor
Shop Foreman

AUTOMOTIVE SERVICE TECHNICIAN

Associate in Applied Science Degree

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
AUT	100	Preventive Maintenance and Safety Inspection	2	2	0	3
AUT	101	Internal Combustion Engines I	2	4	0	4
AUT	103	Electrical Systems I	2	4	0	4
ENG	101	Fundamentals of English	3	0	0	3
MAT	101	Algebra and Trigonometry I	5	0	0	5
			14	10	0	19
Second Quarter (Winter)						
AUT	152	Cooperative Work Experience	0	0	30	3
CAS	104	Introduction to Business Data Processing	2	2	0	3
			2	2	30	6
Third Quarter (Spring)						
AUT	102	Internal Combustion Engines II	2	4	0	4
AUT	104	Electrical Systems II	2	2	0	3
AUT	105	Basic Automotive Fuel Systems	2	4	0	4
ENG	102	Composition	3	0	0	3
PHY	111	Physics I-Mechanics	3	2	0	4
			12	12	0	18
Fourth Quarter (Summer)						
AUT	154	Cooperative Work Experience	0	0	30	3
		Electives	5	0	0	5
			5	0	30	8
Fifth Quarter (Fall)						
AUT	201	Automotive Chassis and Suspension Systems I	2	4	0	4
AUT	203	Automotive Power Trains I	2	4	0	4
AUT	206	Brake Systems	2	2	0	3
AUT	209	Automotive Emission Control Systems	2	2	0	3
ELN	150	Control Devices	3	2	0	4
			11	14	0	18
Sixth Quarter (Winter)						
AUT	156	Cooperative Work Experience	0	0	30	3
PHY	112	Physics II-Rotation and Matter	3	2	0	4
			3	2	30	7
Seventh Quarter (Spring)						
AUT	202	Automotive Chassis and Suspension Systems II	2	2	0	3
AUT	204	Automotive Power Trains II	2	4	0	4
AUT	205	Automotive Heating and Air Conditioning	2	2	0	3
AUT	207	Automotive Electronics	3	2	0	4
ENG	103	Report Writing	3	0	0	3
			12	10	0	17
Eighth Quarter (Summer)						
AUT	158	Cooperative Work Experience	0	0	30	3
		Social Science Elective	3	0	0	3
			3	0	30	6

Ninth Quarter (Fall)

AUT	208	Automotive Electronic Controlled Systems	3	2	0	4
AUT	210	Automotive Fuel Injection	3	2	0	4
AUT	211	Engine Performance and Drivability	2	6	0	5
ENG	204	Oral Communications	3	0	0	3
PSY	206	Applied Psychology	3	0	0	3
			14	10	0	19
		Program Totals	76	60	120	123*

*Five (5) credit hours of non-major elective(s) must be taken prior to graduation and have been included in the Fourth Quarter.

Selected courses from this program are also offered in the evening schedule.

CARPENTRY AND CABINETMAKING

Carpenters construct, erect, install, and repair structures of wood, plywood, and wallboard, using hand and power tools. This curriculum in carpentry is designed to prepare individuals with skills and knowledge of construction with wood. The curriculum includes mathematics, blueprint reading, methods of construction, and information on building materials and energy efficient construction.

Carpenters work on new construction and maintain and repair many types of existing structures, both residential and commercial. They have an understanding of building materials, concrete form construction, rough framing, roof and stair construction, the application of interior and exterior trim, insulation, and other energy saving materials and the installation of cabinets and fixtures.

Most carpenters are employed by contractors in the building construction fields. When specializing in a particular phase of carpentry, the job may be designated according to the specialty as rough carpenter, framing carpenter, form carpenter, scaffolding carpenter, acoustical insulating carpenter, and finish carpenter.

Job Opportunities

Entry Level

Carpenter
Building Construction Inspector
Roofer
Cabinet Installer
Maintenance Carpenter

Advanced Level (with experience)

Carpenter Foreman
Finish Carpenter
Cabinetmaker

CARPENTRY AND CABINETMAKING
Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
CAR	1102	Cabinetmaking I	5	0	15	10
BPR	1107	Blueprint Reading: Construction Trades	1	2	0	2
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
			12	4	15	19

Second Quarter (Winter)

CAR	1101	Carpentry I	5	0	6	7
CAR	1104	Cabinetmaking II	0	0	9	3
BPR	1109	Blueprint Reading: Construction Trades	1	2	0	2
ENG	1102	Communication Skills	3	0	0	3
MAT	1103	Geometry	3	0	0	3
			12	2	15	18

Third Quarter (Spring)

CAR	1103	Carpentry II	6	0	15	11
DFT	1127	Construction Trades: Drafting I	2	2	0	3
PSY	1101	Human Relations	3	0	0	3
			11	2	15	17

Fourth Quarter (Summer)

CAR	1105	Advanced Carpentry Projects	2	0	24	10
BUS	1103	Small Business Operations	3	0	0	3
DFT	1128	Construction Trades: Drafting II	2	2	0	3
			7	2	24	16
		Program Totals	42	10	69	70

This program is also offered in the evening schedule. See Evening Programs listing.

CIVIL ENGINEERING TECHNOLOGY

The Civil Engineering Technology curriculum provides the specialized background and related theory for technicians who work primarily with architects and engineers in the field of construction. The Civil Engineering Technician carries out many of the planning and supervising tasks necessary in the construction of transportation systems, such as highways, pipelines, railroads, airfields, and transmission lines; structures for residential and commercial buildings, bridges, dams, and power plants; and water and waste treatment systems. The graduate may perform job tasks in planning, drafting, estimating, supervising, inspecting, or managing construction projects. Other duties might include ordering materials, interpreting plans and specifications, structural detailing, drafting work, making engineering computation of earth work, storm drainage and property surveys.

Upon graduation from this program, the Civil Engineering Technician may qualify for various jobs, such as surveying instrumentation and/or party chief, field or laboratory materials tester, construction foreman, field engineering technician or superintendent, expeditor, manager, estimator, construction materials or equipment salesperson, inspector, drafter or structural detailer. Graduates of this program may receive credit toward qualifying to be a land surveyor. They may also continue their education toward a bachelor's degree in engineering technology.

Job Opportunities

Survey Party Chief
Materials Test Technician
Equipment or Materials Salesperson
Civil Drafter or Structural Detailer
Field Engineering Technician
Construction Inspector
Estimator
Construction Foreman

CIVIL ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
CIV	217	Introduction to Construction Technology	2	6	4
SUR	101	Surveying I	2	6	4
EGR	105	Calculator Operation	0	2	1
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
			12	14	17
Second Quarter (Winter)					
CIV	230	Hydraulics	2	2	3
DFT	110	Engineering Graphics	2	4	4
CAS	105	Introduction to Scientific Data Processing	2	2	3
ENG	102	Composition	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
			14	8	18
Third Quarter (Spring)					
CIV	202	Properties of Soils	2	2	3
SUR	102	Surveying II	2	6	4
DFT	104	Civil Drafting	2	4	4
ENG	204	Oral Communications	3	0	3
MAT	103	Analytical Geometry and Calculus	5	0	5
			14	12	19
Fourth Quarter (Summer)					
CIV	231	Hydrology	2	2	3
SUR	210	Construction Surveying	1	3	2
CHM	102	Engineering Chemistry	2	2	3
DFT	220	Computer Aided Drafting	1	6	3
PHY	111	Physics I - Mechanics	3	2	4
			9	15	15
Fifth Quarter (Fall)					
CIV	114	Statics	5	0	5
CIV	220	Project Planning	2	2	3
CIV	221	Asphalt	2	2	3
CIV	223	Codes, Contracts, and Specifications	2	2	3
PHY	112	Physics II-Rotation and Matter	3	2	4
			14	8	18
Sixth Quarter (Winter)					
CIV	216	Strength of Materials	5	0	5
CIV	218	Properties of Plain Portland Concrete	2	2	3
CIV	225	Construction Estimating	2	4	4
CIV	232	Water and Waste Treatment	2	2	3
SOC	201	Social Problems	3	0	3
			14	8	18
Seventh Quarter (Spring)					
CIV	219	Steel and Timber Construction	2	4	4
CIV	224	Reinforced Portland Concrete	2	2	3
CIV	228	Relations and Ethics	1	3	2
ENG	103	Report Writing	3	0	3
PSY	206	Applied Psychology	3	0	3
			11	9	15
		Program Totals	88	74	125*

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

This program is also offered in the evening schedule. See Evening Programs listing.

DIESEL VEHICLE MAINTENANCE

The Diesel Vehicle Maintenance curriculum provides a program for developing the basic knowledge and skills needed in diesel vehicle maintenance. Manual skills are developed in practical shop work.

The use of diesel engines is found in farm and construction equipment, electric generators, trucks, buses, trains, automobiles, and ships. Many diesel vehicle mechanics specialize in maintenance and repair of equipment; others specialize in rebuilding engines.

Diesel vehicle mechanics are instructed through class assignments, discussion and shop practice to maintain and repair engines, chassis and suspensions, and power trains used to power farm equipment, construction equipment, buses and trucks. They use handtools, precision measuring and testing instruments, and power tools in overhauling and maintaining diesel powered equipment.

Job Opportunities

Diesel Mechanic
Diesel-Mechanic Apprentice
Diesel-Mechanic Helper
Fuel-Injection Servicer
Repairer, Heavy
Construction-Equipment-Mechanic Helper
Spring-Repairer Helper, Hand
Maintenance Mechanic Helper
Tractor-Mechanic Helper

Opportunities in heavy equipment maintenance will be found within dealerships, trucking companies, public transportation companies, general contractors, farm implement dealers, and industries that maintain heavy equipment.

DIESEL VEHICLE MAINTENANCE

Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
HEV	1101	Diesel Engine Theory and Practice	5	0	12	9
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
MEC	1101	Elementary Hydraulic Principles	2	3	0	3
			13	5	12	19
Second Quarter (Winter)						
HEV	1102	Diesel-Electrical, Fuel, Lubricating and Cooling Systems	7	0	12	11
PHY	1101	Applied Science I	3	2	0	4
WLD	1101	Basic Welding	1	2	0	2
			11	4	12	17

Third Quarter (Spring)

HEV	1103	Diesel-Hydraulic Systems, Steering, Suspension, Braking, Power Train, Injector Testing, and Servicing	6	0	12	10
ECO	1107	Consumer Economics	3	0	0	3
PHY	1102	Applied Science II	3	2	0	4
MES	1112	Machine Shop Processes	1	0	3	2
			13	2	15	19

Fourth Quarter (Summer)

HEV	1105	Diesel Service and Repair	4	0	6	6
HEV	1107	Power Train Systems	4	0	6	6
ENG	1102	Communication Skills	3	0	0	3
PSY	1101	Human Relations	3	0	0	3
			14	0	12	18
		Program Totals	51	11	51	73

DRAFTING AND DESIGN ENGINEERING TECHNOLOGY

The Drafting and Design Engineering Technology curriculum prepares technicians for drafting and/or designing mechanical parts, mechanisms, and mechanical systems.

Emphasis is placed on developing the student's ability to think and plan as well as on the development of drafting and design skills. Computer Aided Drafting (CAD) and conventional equipment will be used to produce drawings such as sectional views, subassemblies and major components of machinery, and mechanical systems.

Coursework includes the study of technical drafting and design, materials, applied mechanics, mechanical systems, manufacturing methods, manufacturing processes, applied physics, technical mathematics, descriptive geometry, computer applications, and written and oral communications.

Drafting and design engineering technicians are employed in many types of manufacturing, fabrication, research and development, and service industries.

Job Opportunities

Mechanical Design Technician
Mechanical Drafter
Tool Design Drafter
CAD Drafter/Designer
Detail Drafter

CADD

This program includes Computer Aided Drafting and Design courses to prepare graduates for employment in industries using computers in Drafting and Design applications.

DRAFTING AND DESIGN ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
DFT	101	Drafting	2	4	4
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
MEC	111	Manufacturing Processes I	3	3	4
SOC	201	Social Problems	3	0	3
			16	7	19
Second Quarter (Winter)					
DFT	102	Drafting	2	4	4
ENG	102	Composition	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
MEC	211	Engineering Materials	3	3	4
PHY	111	Physics I-Mechanics	3	2	4
			16	9	20
Third Quarter (Spring)					
DFT	103	Drafting	2	4	4
DFT	220	Computer Aided Drafting	1	6	3
ENG	204	Oral Communications	5	0	5
MAT	204	Applied Mathematics	5	0	5
PHY	112	Physics II-Rotation and Matter	3	2	4
			14	12	19
Fourth Quarter (Summer)					
DFT	204	Descriptive Geometry	1	6	3
CAS	105	Introduction to Scientific Data Processing	2	2	3
MEC	101	Machine Processes	2	4	4
MEC	105	Statics	5	0	5
MEC	230	Industrial Motor Controls	4	2	5
			14	14	20
Fifth Quarter (Fall)					
DFT	205	Design Drafting II	2	6	4
DFT	221	Advanced Computer Aided Drafting and Design	1	6	3
MEC	205	Strength of Materials	5	0	5
PHY	113	Physics III-Electricity and Magnetism	3	2	4
			11	14	16
Sixth Quarter (Winter)					
DFT	201	Design Drafting I	2	6	4
DFT	211	Mechanisms and Kinematic Design	2	6	4
ENG	103	Report Writing	3	0	3
MEC	235	Hydraulics and Pneumatics	3	3	4
			10	15	15
Seventh Quarter (Spring)					
DFT	206	Design Drafting III	2	6	4
DFT	222	Computer Aided Manufacturing	2	6	4
PSY	206	Applied Psychology	3	0	3
			7	12	11
		Program Totals	88	83	125*

MAT 103 may be substituted for MAT 204.

This program is also offered in the evening schedule. See Evening Programs listing.

**In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.*

ELECTRONICS ENGINEERING TECHNOLOGY

The Electronics curriculum provides a basic background in electronic related theory, with practical applications of electronics for business and industry. Courses are designed to develop competent electronics technicians who may work as assistants to engineers or as liaisons between engineers and skilled craftspersons.

The electronics technician may start in one or more of the following areas: research, design, development, production, maintenance or sales. The graduate may begin as an electronics technician, an engineering aide, laboratory technician, supervisor or equipment specialist.

Job Opportunities

Electronics Technician
Electrical Tester
Electronics Engineering Technician
Electronics Mechanic
Electronic Sales and Service Technician

ELECTRONICS ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week		Credit Hrs.
			Class	Lab	
First Quarter (Fall)					
ELN	101	Fundamentals of D.C.	4	4	6
DFT	110	Engineering Graphics	2	4	4
ELN	110	Technical Documentation	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
			15	10	20
Second Quarter (Winter)					
ELN	102	Fundamentals of A.C.	4	4	6
DFT	220	Computer Aided Drafting	1	6	3
ENG	102	Composition	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
PHY	111	Physics I - Mechanics	3	2	4
			16	12	21
Third Quarter (Spring)					
ELN	104	Semiconductor Devices	4	4	6
ELN	111	Fabrication Techniques	1	4	3
MAT	103	Analytical Geometry and Calculus	5	0	5
(MAT	151	Calculus and Analytic Geometry I	5	0	5)
PHY	112	Physics II - Rotation and Matter	3	2	4
			13	10	18
Fourth Quarter (Summer)					
ELN	201	Linear Integrated Circuits	4	4	6
PHY	114	Physics IV - Light, Sound and Wave Phenomena	3	2	4
ENG	103	Report Writing	3	0	3
CHM	102	Engineering Chemistry	2	2	3
			12	8	16

Fifth Quarter (Fall)

ELN	202	Communications Systems	4	4	6
ELN	203	Digital Fundamentals	4	4	6
ELN	210	Analytic Troubleshooting	1	2	2
CSC	222	C Programming	2	2	3
			11	12	17

Sixth Quarter (Winter)

ELN	204	Digital Applications	4	4	6
ELN	223	Microprocessor Principles	4	4	6
ECO	102	Economics	3	0	3
PSY	206	Applied Psychology	3	0	3
			14	8	18

Seventh Quarter (Spring)

ELN	224	Microprocessor Interfacing	4	4	6
ELN	225	Industrial Controls	4	4	6
ENG	204	Oral Communications	3	0	3
			11	8	15
		Program Totals	92	68	128*

*In addition tot the previously stated required courses, a minimum of three (3) credit hours of non-major elective(s) must be taken before graduation.

This program is also offered in the evening schedule. See Evening Programs listing.

MACHINIST

The Machinist curriculum gives individuals the opportunity to acquire basic skills and related technical information necessary to gain employment in the metalworking industries. The machinist is a skilled metalworker who shapes metal by using machine tools and hand tools. Machinists must be able to set up and operate the machine tools found in a modern shop. Computer Numerical Control (CNC) may be integrated into various phases of the curriculum or as specialized courses.

The machinist is able to select the proper tools and materials required for each job and to plan the cutting and finishing operations in their proper order so that the work can be finished according to blueprints or written specifications. The machinist makes computations relating to dimensions of work, tooling, feeds, and speeds of machining. Precision measuring instruments are used to measure the accuracy of work. The machinist also must know the characteristics of metals so that annealing and hardening of tools and metal parts can be accomplished in the process of turning a block of metal into an intricate precise part.

Job Opportunities

Entry Level	Advanced Level
Machinist Apprentice	Machinist
Tool and Die Maker Apprentice	Maintenance Machinist
Machine Set-Up Operator	
Quality Control Technician	
Production Machine Operator	
CNC Set-Up Operators	

MACHINIST

Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
MES	1101	Machine Shop I	3	0	12	7
BPR	1104	Blueprint Reading: Mechanical	1	2	0	2
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
PSY	1101	Human Relations	3	0	0	3
			13	4	12	19
Second Quarter (Winter)						
MES	1102	Machine Shop II	3	0	12	7
BPR	1105	Blueprint Reading: Mechanical	1	2	0	2
MAT	1103	Geometry	3	0	0	3
PHY	1100	Industrial Science	3	2	0	4
			10	4	12	16
Third Quarter (Spring)						
MES	1103	Machine Shop III	3	0	12	7
BPR	1106	Blueprint Reading: Mechanical	1	2	0	2
BUS	1103	Small Business Operations	3	0	0	3
(ECO	1107	Consumer Economics)	(3)	(0)	(0)	(3)
ENG	1102	Communication Skills	3	0	0	3
MAT	1104	Trigonometry	3	0	0	3
MEC	1115	Treatment of Ferrous & Non-Ferrous Metals	1	0	3	2
			14	2	15	20
Fourth Quarter (Summer)						
MES	1104	Machine Shop IV	2	0	6	4
MES	1107	Introduction to Computer Numerical Control	4	4	0	6
MAT	1123	Machinist Mathematics	3	0	0	3
WLD	1101	Basic Welding	1	2	0	2
			10	6	6	15
		Program Totals	47	16	45	70

This program is also offered in the evening schedule. See Evening Programs listing.

MECHANICAL ENGINEERING TECHNOLOGY

The Mechanical Engineering Technology curriculum prepares technicians to assist engineers in the design and development of machinery and other mechanical equipment and parts and to perform other activities which require technical knowledge of factors such as tolerances, stress, strains, friction and vibration. The scope of subject matter covered prepares the graduate for employment in greatly diversified branches of the mechanical field.

The graduate may wish to work with testing experimental machinery and equipment and analyzing the results. Typical of such devices are internal combustion engines, steam turbines, jet and rocket engines, nuclear reactors, refrigeration and air conditioning equipment, missiles, spacecraft, marine equipment, motor vehicles, railroad equipment and machines for specialized industries such as textile mills. Another specialty area graduates may wish to pursue is that of the tool designer. Tool designers design tools and devices for the mass production of manufactured articles. They may also work with the instrumentation and design of machine tools or in equipping plants or mills which require special construction to accommodate power-producing or transmitting machinery.

Job Opportunities

Mechanical Engineering Technician
Mechanical Technician
Tool Design Drafter
Mechanical Equipment Engineering Assistant
Metallurgical Technician
Metallurgical Laboratory Assistant
Tester
Numerical Control Tool Programmer
Heat Transfer Technician
Tool Designer
Mechanical Design Technician
Die Designer
Test Technician

MECHANICAL ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
MEC	211	Engineering Materials	3	3	4
DFT	110	Engineering Graphics	2	4	4
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
			13	7	16
Second Quarter (Winter)					
MEC	111	Manufacturing Processes I	3	3	4
CAS	105	Introduction to Scientific Data Processing	2	2	3
ENG	102	Composition	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
PHY	111	Physics I - Mechanics	3	2	4
			16	7	19
Third Quarter (Spring)					
MEC	105	Statics	5	0	5
MEC	235	Hydraulics and Pneumatics	3	3	4
ENG	204	Oral Communications	3	0	3
MAT	103	Analytical Geometry and Calculus	5	0	5
PHY	112	Physics II - Rotation and Matter	3	2	4
			19	5	21

Fourth Quarter (Summer)					
MEC	110	Supervised Work Experience	0	30	3
ENG	107	Technical Composition	3	0	3
PHY	113	Physics III - Electricity and Magnetism	3	2	4
			6	32	10
Fifth Quarter (Fall)					
MEC	112	Manufacturing Processes II	3	3	4
MEC	205	Strength of Materials	5	0	5
DFT	220	Computer Aided Drafting	1	6	3
PSY	206	Applied Psychology	3	0	3
TDT	101	Geometric Tolerances and Inspection Procedures	1	3	2
			13	12	17
Sixth Quarter (Winter)					
MEC	206	Dynamics	4	0	4
MEC	212	Automation I	4	4	6
MEC	230	Industrial Motor Controls	4	2	5
ENG	103	Report Writing	3	0	3
TDT	105	Manufacturing Cost Analysis	1	2	2
			16	8	20
Seventh Quarter (Spring)					
MEC	208	Machine Design	3	3	4
MEC	214	Automation II	3	4	5
MEC	216	Vibrational Analysis and Preventive Maintenance	4	4	6
DFT	221	Advanced Computer Aided Drafting and Design	1	6	3
			11	17	18
		Program Totals	94	88	126*

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

This program is offered in the evening schedule on alternate years. See Evening Programs listing.

SURVEYING TECHNOLOGY

This program is designed to provide training for technicians in the many areas of surveying. Surveyors are involved in land surveying, route surveying, photogrammetry, mapping, and other areas of land description and measurements. Nearly all construction of buildings, bridges, dams, highways, airfields, and other engineered projects requires one or more types of surveying.

Students will be trained as technicians to work with skilled professionals as instrument persons, party chiefs, surveying aids, highway surveyors, mappers, and in many other surveying activities. Graduates of this program will be prepared to pursue the requirements necessary to become a registered land surveyor.

Job Opportunities

- Surveying Technician
- Mapper
- Drafter
- Surveying Party Chief
- Construction Layout Technician
- Deed Research Technician
- Instrument Person
- Land Surveying Technician
- Highway Surveying Technician

Note: Two years of the experience requirement of the Registration Board will be given to graduates of this program.

SURVEYING TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week		Credit Hrs.
			Class	Lab	
First Quarter (Fall)					
MAT	101	Algebra and Trigonometry I	5	0	5
EGR	105	Calculator Operation	0	2	1
ENG	101	Fundamentals of English	3	0	3
CIV	217	Introduction to Construction Technology	2	6	4
SUR	101	Surveying I	2	6	4
			12	14	17
Second Quarter (Winter)					
MAT	102	Algebra and Trigonometry II	5	0	5
ENG	102	Composition	3	0	3
CAS	105	Introduction to Scientific Data Processing	2	2	3
DFT	110	Engineering Graphics	2	4	4
CIV	230	Hydraulics	2	2	3
			14	8	18
Third Quarter (Spring)					
DFT	104	Civil Drafting	2	4	4
ENG	204	Oral Communications	3	0	3
CIV	202	Properties of Soils	2	2	3
SUR	102	Surveying II	2	6	4
MAT	103	Analytical Geometry and Calculus	5	0	5
			14	12	19
Fourth Quarter (Summer)					
SUR	210	Construction Surveying	1	3	2
PHY	114	Physics IV-Light, Sound and Wave Phenomena	3	2	4
CIV	231	Hydrology	2	2	3
SUR	103	Route Surveying	2	6	4
SUR	104	Topographic Surveys/Photogrammetry	2	6	4
			10	19	17
Fifth Quarter (Fall)					
CIV	223	Codes, Contracts, and Specifications	2	2	3
DFT	220	Computer Aided Drafting	1	6	3
PHY	113	Physics III - Electricity and Magnetism	3	2	4
CIV	220	Project Planning	2	2	3
SUR	205	Surveying Research	1	3	2
			9	15	15

Sixth Quarter (Winter)

SUR	206	Equipment Calibration	1	3	2
SUR	207	Field and Office Practice	1	3	2
SOC	201	Social Problems	3	0	3
SUR	214	Subdivision Planning	2	6	4
SUR	209	Surveying Law	4	0	4
			11	12	15

Seventh Quarter (Spring)

SUR	204	Advanced Surveying	2	6	4
PSY	206	Applied Psychology	3	0	3
CIV	228	Relations and Ethics	1	3	2
SUR	215	Senior Project	0	6	2
ENG	103	Report Writing	3	0	3
			9	15	14
		Program Totals	79	95	120*

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

This program is also offered in the evening schedule. See Evening Programs listing.

TOOL DESIGN TECHNOLOGY

The Tool Design Technology program provides the student knowledge and skills to design and detail specific types of tools to produce products for the manufacturing industry. The curriculum includes the basic skills for designing a variety of tools including jigs and fixtures, gauges, metal stamping dies, cutting tools, plastic and metal casting molds, and special machines. The program offers drafting skills used in most engineering functions, a planned sequence of related courses and shop experiences, instruction in hydraulics, pneumatics, electrical control systems, and machining processes. The student also studies cost analysis and the evaluation of economic benefits of alternative designs.

An emphasis on thinking, planning, and advanced courses such as computer aided drafting and design should prepare the graduate for the most modern tool design environments. The content of the program will help the graduate to enter the field of Tool Design and advance to future jobs in the manufacturing engineering market.

Job Opportunities

Tool Detailer
Tool Drafter
Tool Design Technician
Tool Engineering Technician
Manufacturing/Production Engineering Technician

TOOL DESIGN TECHNOLOGY

Associate in Applied Science Degree

Notice: At this time, the Associate in Applied Science degree is not available in this program. However, a Certificate in Tool Design Technology will be awarded

upon successful completion of the courses listed below. These courses will be available on an evening schedule as indicated.

Quarter	Courses
Fall	TDT 201, DFT 220
Winter	TDT 101, TDT 202
Spring	TDT 203, DFT 221

The Tool Design Technology certificate program may be of special interest to graduates of the Tool, Die and Mold Making program. General Education and Related courses are available, and students are encouraged to take these in support of the certificate courses.

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
DFT	101	Drafting	2	4	4
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
MEC	111	Manufacturing Processes I	3	3	4
SOC	201	Social Problems	3	0	3
			16	7	19
Second Quarter (Winter)					
DFT	102	Drafting	2	4	4
ENG	102	Composition	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
MEC	101	Machine Processes	2	4	4
PHY	111	Physics I - Mechanics	3	2	4
			15	10	20
Third Quarter (Spring)					
DFT	103	Drafting	2	4	4
DFT	204	Descriptive Geometry	1	6	3
ENG	204	Oral Communications	3	0	3
MAT	204	Applied Mathematics	5	0	5
PHY	112	Physics II - Rotation and Matter	3	2	4
			14	12	19

MAT 103 may be substituted for MAT 204.

Fourth Quarter (Summer)					
TDT	201	Tool Design I	2	6	4
DFT	220	Computer Aided Drafting	1	6	3
CAS	105	Introduction to Scientific Data Processing	2	2	3
MEC	105	Statics	5	0	5
			10	14	15
Fifth Quarter (Fall)					
TDT	101	Geometric Tolerances and Inspection Procedures	1	3	2
TDT	202	Tool Design II	2	6	4
MEC	205	Strength of Materials	5	0	5
MEC	235	Hydraulics and Pneumatics	3	3	4
PHY	113	Physics III - Electricity and Magnetism	3	2	4
			14	14	19

Sixth Quarter (Winter)

TDT	105	Manufacturing Cost Analysis	1	2	2
TDT	203	Tool Design III	2	6	4
ENG	103	Report Writing	3	0	3
MEC	206	Dynamics	4	0	4
MEC	213	Machine Design	2	2	3
			12	10	16

Seventh Quarter (Spring)

TDT	204	CAD/CAM Operations in Automation	2	6	4
TDT	210	Introduction to CNC and Robotic Applications	3	3	4
DFT	221	Advanced Computer Aided Drafting and Design	1	6	3
PSY	206	Applied Psychology	3	0	3
			9	15	14
		Program Totals	90	82	127*

This program is also offered in the evening schedule. See Evening Programs listing.

**In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.*

TOOL, DIE AND MOLD MAKING

Students accepted for the V-048 Tool, Die and Mold Making curriculum must have completed the V-032 Machinist curriculum or be able to demonstrate journeyman-level machinist skills.

The Tool, Die and Mold Making curriculum prepares machinists for the machining of tools, dies and molds for the mass production of parts. These parts may be produced by punching, stamping or molding them into the required sizes and shapes. It is the responsibility of tool, die and mold makers to produce the special tools and fixtures for these production operations. They may also produce the gages and other inspection tools used in checking mass produced parts.

Students enrolling in the Tool, Die and Mold Making program should gain the necessary skills and related information to make it possible for them to obtain entry-level employment in this field. Typical jobs which might be secured in the manufacturing field include tool maker trainee, die maker trainee, mold maker trainee, piece part inspector and tool inspector. Tool, die and mold makers analyze a variety of specifications, lay out metal stock and set up and operate machine tools. They fit and assemble parts to make and repair metal working dies, molds, cutting tools, jigs, fixtures, and gages. The computer dimensions, decide on machining to be done and plan layout and assembly operations.

Job Opportunities

Tool Maker Trainee
Tool Maker Apprentice
Die Maker Trainee
Die Maker Apprentice
Mold Maker Trainee
Mold Maker Apprentice
Piece Part Inspector
Tool Inspector
Gage and Instrument Inspector

Specific Entrance Requirements

To advance from the Machinist curriculum to the Tool, Die and Mold Making curriculum the student must have obtained a grade of "B" or better in MES 1103, MES 1104, MAT 1104 and MAT 1123. Any exceptions to these requirements will be decided by a committee chaired by the Chairperson of the Tool, Die and Mold Making department.

TOOL, DIE AND MOLD MAKING*

Technical Diploma

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
Fifth Quarter (Fall)						
TDM	1201	Machine Processes	3	0	12	7
DFT	1207	General Machine Drafting	2	4	0	4
MAT	1203	Trigonometry	3	0	0	3
			8	4	12	14
Sixth Quarter (Winter)						
TDM	1202	Machine Processes	3	0	12	7
ELC	1201	Electricity-Industrial	2	2	0	3
MAT	1204	Compound Angles	3	0	0	3
MEC	1203	Metallurgy	3	0	0	3
			11	2	12	16
Seventh Quarter (Spring)						
TDM	1204	Machine Processes	3	0	12	7
TDM	1205	Fundamentals of Mold Construction	3	2	0	4
BPR	1208	Blueprint Reading: Tool and Die	1	4	0	3
MEC	1209	Hydraulics and Pneumatics	3	0	0	3
			10	6	12	17
Eighth Quarter (Summer)						
TDM	1206	Machine Processes	3	0	12	7
TDM	1207	Special Problems and Molding	3	4	0	5
DFT	1209	Tool Design and Planning	2	4	0	4
			8	8	12	16
		Program Totals	37	20	48	63

*Students who have not completed the machinist curriculum must also take ENG 1102 and PSY 1101. Total Program credit hours 69.

This program is also offered in the evening schedule. See Evening Programs listing.

WELDING

The Welding curriculum gives students sound understanding of the principles, methods, techniques and skills essential for successful employment in the welding field and metals industry. Welders join metals by applying intense heat, and sometimes pressure to form a permanent bond between intersecting metals.

Welding offers employment in practically any industry: shipbuilding, automotive, aircraft, guided missiles, heavy equipment, railroads, construction, pipe fitting, production shops, job shops and many others.

Job Opportunities

Entry Level	**Advanced Level**
Arc Welding	Layout Worker I
Arc Welding - Machine Operator	Welder - Fitter
Gas Welding - Machine Operator	
Gas Welding	
Welder - Assembler	
Combination Welder	

WELDING

Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
WLD	1120	Oxyacetylene Welding and Cutting	3	0	12	7
BPR	1108	Basic Mechanical Blueprint Reading	1	2	0	2
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamental of Mathematics	5	0	0	5
MEC	1124	Metallurgy	3	0	0	3
			13	4	12	19
Second Quarter (Winter)						
WLD	1121	Arc Welding	3	0	12	7
BPR	1117	Blueprint Reading: Welding	1	2	0	2
ELC	1119	Electricity for Welders	3	2	0	4
ENG	1102	Communication Skills	3	0	0	3
MAT	1103	Geometry	3	0	0	3
			13	4	12	19
Third Quarter (Spring)						
WLD	1112	Mechanical Testing & Inspection	1	0	3	2
WLD	1122	Commercial & Industrial Practices	3	0	9	6
WLD	1123	Inert Gas Welding	1	0	3	2
MES	1112	Machine Shop Processes	1	0	3	2
PSY	1101	Human Relations	3	0	0	3
			9	0	18	15
Fourth Quarter (Summer)						
WLD	1124	Pipe Welding	3	0	12	7
WLD	1125	Certification Practices	3	0	6	5
BUS	1103	Small Business Operations	3	0	0	3
(ECO	1107	Consumer Economics)	(3)	(0)	(0)	(3)
DFT	1126	Pattern Development & Layout	0	3	0	1
			9	3	18	16
		Program Totals	44	11	60	69

This program is also offered in the evening schedule. See Evening Program Listing.

COOPERATIVE AGREEMENTS

Asheville-Buncombe Technical Community College has cooperative academic agreements with other educational institutions. The agreements provide for dual/shared enrollment of students.

Law Enforcement Technology

The College has agreements with area high schools for instruction in Law Enforcement Technology for juniors and seniors. Students study law enforcement courses for a year and earn a unit of high school credit and 15 quarter hours of college credit if they enroll in the A-B Tech Law Enforcement Technology program.

Walking to the next class is a pleasure on warm days.

College ransfer Programs

COLLEGE TRANSFER PROGRAMS

	College Transfer
Recommended High School Courses	Individuals who do not have required credits can enter A-B Tech as a provisional student in the College Transfer program.
A-B Tech Entrance Requirements	Algebra I & II Geometry Biology 1 additional Lab Science (Chemistry or Physics) Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall Can take single courses any quarter
Award	Associate in Arts Associate in Science
Employment Opportunities	Transfer at junior level to four-year institutions

ARTS AND SCIENCES

The Division of Arts and Sciences is supportive of all curricula and offers the College Transfer programs on a day and evening schedule. The Division of Arts and Sciences includes the following departments: Biology, Chemistry and Physics, Guided Studies, English and Foreign Languages, Humanities, Mathematics, and Physical Education.

COLLEGE TRANSFER PROGRAMS

Associate in Arts (A.A.) Degree

The Associate in Arts degree program is recommended for students who plan to transfer to senior colleges and universities to continue study in art, education, humanities, music, philosophy, social sciences, or other areas leading to a Bachelor of Arts (B.A.) degree.

The program requires students to have good basic skills upon admission and to achieve a high level of competency in the various courses constituting the program.

Asheville-Buncombe Technical Community College endeavors to facilitate the transfer of credit to senior institutions. However, the College cannot assure that all of its courses will actually transfer to a given senior institution or for a specific program. Therefore, students should plan their program in close coordination with the senior institution to which they plan to transfer. Courses listed in the catalog are offered upon sufficient enrollment and may not be available every quarter. Day and evening schedules should be reviewed as the program sequence is planned. Students who wish to enroll in individual courses without planning to complete graduation requirements may register as special students.

Students who complete the Associate in Arts degree may transfer to senior institutions to pursue majors such as:

Business Administration
Business Education
Elementary Education
English
Foreign Languages
Geography
History
International Studies
Journalism
Law
Law Enforcement
Management
Physical Education
Political Science
Psychology
Recreation
Secondary Education
Social Work
Sociology
Speech

SPECIFIC ENTRANCE REQUIREMENTS

1. General College admission requirements.

2. Applicants who have not completed the courses specified below may be admitted as provisional students and will be placed in courses appropriate for their educational background.

High School		A-B Tech
a. Algebra I	or	MAT 096 and 097
b. Algebra II	or	MAT 098 and 099
c. Geometry	or	MAT 091
d. Chemistry or Physics	or	CHM 100

CURRICULUM REQUIREMENTS FOR THE
Associate in Arts (A.A.) Degree

Requirements (67 Quarters Hours)	**Quarter Hours**
Communications ENG 150, 151, 152	9
Computing	3
Humanities and Fine Arts ENG 204 and courses selected from Art, English, History, Music, and Philosophy	18
Mathematics Courses should be selected according to proposed major. MAT 101 is required.	10
Science Courses selected must include one (1) three-quarter sequence of a laboratory science. Options include transfer courses in biology, chemistry, and physics.	12

Science course sequences may consist of :

- Biology: BIO 101, 102, 103, or BIO 201 and any two of the following: BIO 202, 203, 204, 205
- Chemistry: CHM 150, 151, 152, CHM 200, 201, 202, or CHM 210, 211, 212
- Physics: Three of the following four courses - PHY 111, 112, 113, 114, or PHY 201, 202, 203

Note: The recommended sequences are Underlined.

Social Science Courses selected from Anthropology, Geography, Political Science, Psychology, and Sociology	12
Physical Education	3
Required Electives Preprofessional Cognate* or General Courses	29
Total Quarter Hours	96

*These preprofessional cognate and general courses should be selected carefully and in coordination with the senior institution.

Major area courses for college transfer programs are defined as courses offered by the General Education Division and require a minimum grade of C for all courses submitted for graduation.

ASSOCIATE IN ARTS DEGREE

Day Program Model of Quarterly Course Sequence*

First Quarter (Fall)			**Hrs Per Week Class**	**Lab**	**Credit Hrs.**
ENG	150	Grammar and Composition	3	0	3
HUM		Humanities Elective	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
PED		Physical Education Elective	0	3	1
SCI		Science Sequence - Course I	3	3	4
			14	6	16

Second Quarter (Winter)

ENG	151	Composition and Introduction to Literature	3	0	3
HUM		Humanities Elective	3	0	3
MAT		Mathematics Elective	5	0	5
PED		Physical Education Elective	0	3	1
SCI		Science Sequence - Course II	3	3	4
			14	6	16

Third Quarter (Spring)

ENG	152	Composition, Research, and Documentation	3	0	3
HUM		Humanities Elective	3	0	3
PED		Physical Education Elective	0	3	1
SCI		Science Sequence - Course III	3	3	4
SOC		Social Science Elective	3	0	3
			12	6	14

Fourth Quarter (Fall)

CAS	101	Introduction to Computing Concepts	2	2	3
ENG	204	Oral Communications	3	0	3
GEN		General Elective	3	0	3
HUM		Humanities Elective	3	0	3
SOC		Social Science Elective	3	0	3
			14	2	15

Fifth Quarter (Winter)

GEN		Three General Electives	9	0	9
HUM		Humanities Elective	3	0	3
SOC		Social Science Elective	3	0	3
			15	0	15

Sixth Quarter (Spring)

GEN		Four General Electives	17	0	17
SOC		Social Science Elective	3	0	3
			20	0	20
		Program Totals	89	20	96

*Course sequence and hours may vary depending on courses selected.

This program is also offered in the evening schedule. See Evening Program listing.

Associate in Science (A.S.) Degree

The College Transfer Program is for students who plan to earn the Associate in Science (A.S.) degree after completing two years (minimum 96 quarter hours) of liberal arts and preprofessional education. The A.S. degree program is recommended for students who plan to transfer to senior colleges and universities to continue study in business, computing, education, engineering, health, mathematics, science, or other areas leading to a Bachelor of Science (B.S.) degree.

The program requires students to have good basic skills upon admission and to achieve a high level of competency in the various courses constituting the program. The A.S. program emphasizes mathematics and science.

Asheville-Buncombe Technical Community College endeavors to facilitate the transfer of credit to senior institutions. However, the College cannot assure that all of its courses will actually transfer to a given senior institution or for a specific program. Therefore, students should plan their program in close coordination with the senior institution to which they plan to transfer. Courses listed in the catalog are offered upon sufficient enrollment and may not be available every quarter. Day and evening schedules should be reviewed as the program sequence is planned. Students who wish to enroll in individual courses without planning to complete graduation requirements may register as special students.

Students who complete the Associate in Science degree may transfer to senior institutions to pursue majors such as

Agriculture
Biology
Chemistry
Computer Science
Dentistry
Engineering
Forestry
Industrial Arts
Mathematics
Medicine
Nursing
Optometry
Pharmacy
Physics
Public Health
Science
Textiles
Veterinary Medicine

SPECIFIC ENTRANCE REQUIREMENTS

1. General College admission requirements.
2. Applicants who have not completed the courses specified below may be admitted as *provisional* students and will be placed in courses appropriate for their educational background.

High School		A-B Tech
a) Algebra I	or	MAT 096 and 097
b) Algebra II	or	MAT 098 and 099
c) Geometry	or	MAT 091
d) Chemistry or Physics	or	CHM 100

CURRICULUM REQUIREMENTS FOR THE

Associate in Science (A.S.) Degree

Requirements (74 Quarter Hours)	**Quarter Hours**
Communications ENG 150, 151, 152	9
Computing	3
Humanities and Fine Arts ENG 204 and courses selected from Art, English, History, Music, and Philosophy	6
Mathematics For most math/science programs, courses selected should include the Calculus sequence. MAT 103 or MAT 151 is required.	20
Science* For most math/science programs, courses selected must include two (2) three-quarter sequences (12 credit hours each) of laboratory science. Options include transfer courses in Biology, Chemistry, and Physics. Science course sequences may consist of: Biology: BIO 101, 102, 103, or BIO 201 and any two of the following - BIO 202, 203, 204, 205 Chemistry: CHM 200, 201, 202, or CHM 210, 211, 212 Physics: Three of the following four courses PHY 111, 112, 113, 114 or PHY 201, 202, 203 Note: The recommended sequences are underlined.	24
Social Science Courses selected from Anthropology, Geography, Political Science, Psychology, and Sociology	9
Physical Education	3
Required Electives (22 Quarter Hours) Preprofessional Cognate** or General Courses	22
Total Quarter Hours	96

* The two-three-quarter sequences of laboratory science that are required must be taken in two different disciplines.

** These preprofessional, cognate courses should be selected carefully and in coordination with the senior institution.

Major area courses for college transfer programs are defined as courses offered by the General Education Division and require a minimum grade of *C* for all courses submitted for graduation.

ASSOCIATE IN SCIENCE DEGREE

Day Program Model of Quarterly Course Sequence*

			Hrs Per Week Class	Hrs Per Week Lab	Credit Hrs.
First Quarter (Fall)					
CAS	105	Introduction to Scientific Data Processing	2	2	3
ENG	150	Grammar and Composition	3	0	3
MAT	150	Precalculus Mathematics	5	0	5
PED		Physical Education Elective	0	3	1
SCI		First Science Sequence - Course I	3	3	4
			13	8	16
Second Quarter (Winter)					
ENG	151	Composition and Introduction to Literature	3	0	3
MAT	151	Calculus and Analytic Geometry I	5	0	5
PED		Physical Education Elective	0	3	1
SCI		First Science Sequence - Course II	3	3	4
SOC		Social Science Elective	3	0	3
			14	6	16
Third Quarter (Spring)					
ENG	152	Composition, Research, and Documentation	3	0	3
MAT	152	Calculus II	5	0	5
PED		Physical Education Elective	0	3	1
SCI		First Science Sequence - Course III	3	3	4
SOC		Social Science Elective	3	0	3
			14	6	16
Fourth Quarter (Fall)					
ENG	204	Oral Communications	3	0	3
HUM		Humanities Elective	3	0	3
MAT	202	Calculus III	5	0	5
SCI		Second Science Sequence - Course I	3	2	4
			14	2	15
Fifth Quarter (Winter)					
GEN		Two General Electives	7	0	7
HUM		Humanities Elective	3	0	3
SCI		Second Science Sequence - Course II	3	2	4
			13	2	14
Sixth Quarter (Spring)					
GEN		Three General Electives	12	0	12
SCI		Second Science Sequence - Course III	3	2	4
SOC		Social Science Elective	3	0	3
			18	2	19
		Program Totals	86	26	96

*Course sequence and hours may vary depending on courses selected.

This program is also offered in the evening schedule. See Evening Programs listing.

Always prepared for rain.

GENERAL TECHNOLOGY CURRICULUM CORE

General Technology Curriculum Core is designed as a career mobility program for technical students to acquire the general education and related courses in subject areas such as humanities, communications, social sciences, and in theoretical and applied sciences such as biology, chemistry, physics, mathematics, general computer studies, and general graphics (drafting) that are foundation courses to specific curriculums in the technical field. After completion of this certificate curriculum, the student has job skills for occupations requiring communications skills and/or science and mathematics. The student may take this program as the first level in a specific technical curriculum as an intended objective component of that technical curriculum. Students may also take this program for transfer to a technical curriculum at another community college system institution either prior to or concurrently with enrollment at the institution at which they intend to pursue or are pursuing a technical curriculum degree.

Job Opportunities

Lab Assistance, research
Technicians Assistance
Employment Clerk
Customer Service Representative
Admissions evaluator (education)

GENERAL TECHNOLOGY CURRICULUM CORE

Certificate

			Hrs. Per Week			Credit
			Class	Lab	Lab	Hrs.
RELATED COURSES						
BIO	101	Human Anatomy and Physiology I	4	3	0	5
BIO	102	Human Anatomy and Physiology II	4	3	0	5
OR						
BIO	107	Anatomy and Physiology I	4	0	0	4
BIO	108	Anatomy and Physiology II	4	0	0	4
Related Electives*						(14) (16)
						24

*Related Electives chosen according to occupational goals from curriculum courses offered by the College to total at least 24 quarter hours of degree-level credit for this section of course.

GENERAL EDUCATION						
ENG	204	Oral Communications	3	0	0	3
PHY	101	Introduction to Psychology	3	0	0	3
SOC	201	Social Problems	3	0	0	3
General Education Electives**						9
						18

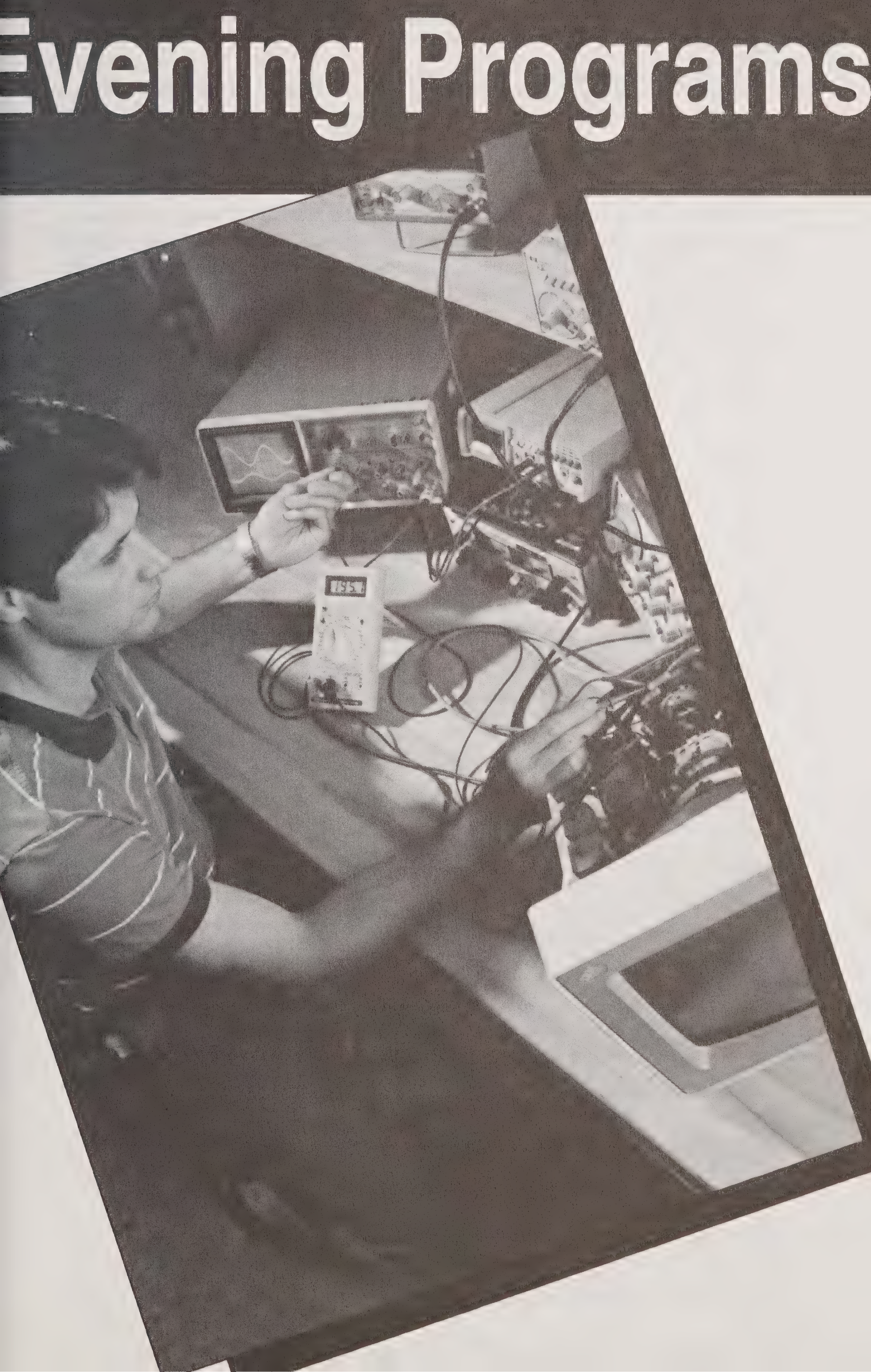
**A total of at least nine (9) quarter hours of degree-level credit of general education electives chosen according to occupational goals from English, social science, and/or humanities curriculum courses offered by the College.

ELECTIVES***

***In addition to the program requirements previously stated, a minimum of six (6) credit hours of electives must be selected from degree-level courses.

The total number of credit hours for this Certificate program is 48.

Evening Programs



Most of the curricular classes offered in the day are also offered on a part-time basis in the evenings or on the weekends. Classes meet both on campus and at various off-campus sites. In addition to classes in the formatted program plans, many single classes are offered for students who seek personal or career advancements.

Beyond individual classes, students may *cluster* selected classes to meet more advanced goals. Any of these individually selected classes may be undertaken by *special schedule* students on a space-available basis if prerequisites have been met.

Evening classes begin at 4:00 p.m. with the majority starting at 6:30 p.m.

Requirements for degree and diploma are the same for day and evening programs.

EVENING PROGRAMS IN ALLIED HEALTH AND PUBIC SERVICE EDUCATION

BASIC LAW ENFORCEMENT TRAINING

See day program listing for conditions of enrollment.

Certificate Awarded

			Hrs. Per Week			Credit
			Class	Lab	Skills	Hrs.
Offered on Demand						
BLE	100A	Basic Law Enforcement	8	0	15	13
			8	0	15	13
BLE	100B	Basic Law Enforcement	8	0	15	13
			8	0	15	13
		Program Totals	16	0	30	26

LAW ENFORCEMENT TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
LET	101	Introduction to Criminal Justice	5	0	5
ENG	100	Reading Comprehension	1	2	2
PSY	101	Introduction to Psychology	3	0	3
			9	2	10
Second Quarter (Winter)					
LET	102	Introduction to Criminology	5	0	5
ENG	101	Fundamentals of English	3	0	3
POL	103	State and Local Government	4	0	4
			12	0	12
Third Quarter (Spring)					
LET	115	Criminal Law I	3	0	3
EMS	100	Introduction to Emergency Medical Services	2	2	3
ENG	102	Composition	3	0	3
PSY	203	Abnormal Psychology	3	0	3
			11	2	12

			Hrs. Per Week		Credit Hrs.
			Class	Lab	
Fourth Quarter (Summer)					
LET	205	Criminal Evidence	4	0	4
LET	216	Criminal Law II	3	0	3
MAT	100	Basic Mathematics	5	0	5
			12	0	12
Fifth Quarter (Fall)					
LET	201	Motor Vehicle Law	3	0	3
LET	210	Criminal Investigation I	4	0	4
ENG	204	Oral Communications	3	0	3
PHO	201	Introduction to Photography	1	2	2
			11	2	12
Sixth Quarter (Winter)					
LET	211	Introduction to Criminalistics	4	2	5
LET	213	Criminal Investigation II	4	0	4
PSY	151	Applied Psychology for Law Enforcement	3	0	3
			11	2	12
Seventh Quarter (Spring)					
LET	110	Introduction to Juvenile Justice	5	0	5
LET	125	Judicial Process	4	0	4
LET	200	Crime Prevention	3	0	3
			12	0	12
Eighth Quarter (Summer)					
LET	202	Traffic Planning and Management	3	2	4
LET	217	Patrol Procedures	3	0	3
SOC	201	Social Problems	3	0	3
			9	2	10
Ninth Quarter (Fall)					
LET	212	Narcotics, Drugs, and Human Behavior	3	2	4
LET	220	Police Organization, Administration, and Supervision	5	0	5
			8	2	9
Tenth Quarter (Winter)					
LET	206	Community Relations	3	0	3
ENG	103	Report Writing	3	0	3
			6	0	6
Eleventh Quarter (Spring)					
		Approved Electives			6
Twelfth Quarter (Summer)					
		Approved Electives			6
		Program Subtotals	101	12	107*

*Plus 8 credit hours of Related Electives and 3 credit hours of General Electives** for a program total of 118 credit hours.

**General Electives may be chosen from among any technical level course offered by A-B Tech.

Related Electives

In addition to required courses, students must complete a minimum of eight (8) credit hours of approved Related Electives. These may be taken at any time during the program, providing the student has completed the proper prerequisites and has departmental approval of his/her schedule prior to registration.

Electives may be offered on the basis of results from demand surveys conducted early in the previous quarter. Related Electives may be scheduled from the courses indicated below.

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
AOT	100	Computer Keyboarding	1	2	0	2
AOT	101	Keyboarding for Office Occupations	2	3	0	3
BIO	101	Human Anatomy and Physiology I	4	3	0	5
BIO	102	Human Anatomy and Physiology II	4	3	0	5
BIO	111	Basic Life Sciences	5	0	0	5
BLE	100	Basic Law Enforcement Training (may serve as the RELATED ELECTIVE requirement)				
BUS	100	Contemporary Business	3	0	0	3
BUS	101	Introduction to Business	3	0	0	3
BUS	114	Business Law	5	0	0	5
BUS	120	Accounting I	3	2	0	4
BUS	121	Accounting II	3	2	0	4
BUS	125	Introduction to Banking Fundamentals4	0	0	4	
BUS	233	Personnel Management and Supervision	3	0	0	3
BUS	234	Introduction to Management	3	2	0	4
CHM	100	Introduction to Chemistry	3	3	0	4
CHM	101	Fundamentals of Physiological Chemistry	3	2	0	4
ECO	102	Economics	3	0	0	3
ECO	107	Consumer Economics	3	0	0	3
ECO	108	Consumer Economics	5	0	0	5
CAS	104	Introduction to Business Data Processing	2	2	0	3
CAS	105	Introduction to Scientific Data Processing	2	2	0	3
LET	105	Introduction to Correction	4	0	0	4
LET	106	Probation and Parole	3	0	0	3
LET	107	Police Liability	3	0	0	3
LET	111	Defense Tactics	1	2	0	2
LET	112	Legal Research	5	0	0	5
LET	116	Criminal Justice Internship	0	0	10	1
LET	250	Topics in Criminal Justice - Law Enforcement I	5	0	0	5
MAT	101	Algebra and Trigonometry I	5	0	0	5
MAT	105	Introduction to Algebra	3	0	0	3
MAT	110	General College Mathematics	5	0	0	5
MAT	160	Elementary Statistics	5	0	0	5
PSY	206	Applied Psychology	3	0	0	3

Internships of ten (10) contact hours per week per quarter may be completed by Criminal Justice students in partial fulfillment of the elective requirements. Internships are designed to demonstrate the competency of the student through extension of the learning initiated in previous Criminal Justice courses. A maximum of three (3) credit hours may be earned through internships. Prerequisite: Permission department chairperson.

EVENING PROGRAMS IN BUSINESS

ACCOUNTING

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	101	Fundamentals of English	3	0	3
			9	2	10
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
MAT	110	General College Mathematics	5	0	5
			8	2	9
Third Quarter (Spring)					
BUS	122	Accounting III	3	2	4
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			9	2	10
Fourth Quarter (Summer)					
AOT	100	Computer Keyboarding	1	2	2
CAS	104	Introduction to Business Data Processing	2	2	3
PSY	206	Applied Psychology	3	0	3
			6	4	8
Fifth Quarter (Fall)					
BUS	114	Business Law	5	0	5
MAT	112	Mathematics of Finance	3	2	4
			8	2	9
Sixth Quarter (Winter)					
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
			6	4	8
Seventh Quarter (Spring)					
BUS	223	Intermediate Accounting I	5	0	5
ECO	105	Introduction to Economics	5	0	5
			10	0	10
Eighth Quarter (Summer)					
BUS	123	Finance	5	0	5
BUS	224	Intermediate Accounting II	3	2	4
			8	2	9
Ninth Quarter (Fall)					
BUS	225	Cost Accounting I	5	0	5
BUS	229	Taxes I	3	2	4
			8	2	9

Tenth Quarter (Winter)					
BUS	233	Personnel Management and Supervision	3	0	3
BUS	226	Cost Accounting II	3	2	4
ENG	204	Oral Communications	3	0	3
			9	2	10
Eleventh Quarter (Spring)					
BUS	247	Insurance	5	0	5
BUS	269	Auditing	5	0	5
			10	0	10
Twelfth Quarter (Summer)					
AOT	200	Microcomputer Operations	1	3	2
ENG	103	Report Writing	3	0	3
ENG	206	Written Communication Skills	3	0	3
			7	3	8
Thirteenth Quarter (Fall)					
BUS	230	Taxes II	3	2	4
			3	2	4
		Program Totals	101	27	119*

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

BANKING AND FINANCE

Associate in Applied Science Degree

			Hrs. Per Week		Credit Hrs.
			Class	Lab	
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	101	Fundamentals of English	3	0	3
			9	2	10
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
MAT	110	General College Mathematics	5	0	5
			8	2	9
Third Quarter (Spring)					
BUS	122	Accounting III	3	2	4
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			9	2	10
Fourth Quarter (Summer)					
BUS	125	Introduction to Banking Fundamentals	4	0	4
AOT	100	Computer Keyboarding	1	2	2
CAS	104	Introduction to Business Data Processing	2	2	3
PSY	206	Applied Psychology	3	0	3
			10	4	12

Fifth Quarter (Fall)

BUS	114	Business Law	5	0	5
MAT	112	Mathematics of Finance	3	2	4
			8	2	9

Sixth Quarter (Winter)

BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
			6	4	8

Seventh Quarter (Spring)

BUS	207	Principles of Bank Operations	5	0	5
ECO	105	Introduction to Economics	5	0	5
			10	0	10

Eighth Quarter (Summer)

BUS	123	Finance	5	0	5
BUS	206	Banking and Finance Credit	3	2	4
			8	2	9

Ninth Quarter (Fall)

BUS	238	Consumer Behavior	5	0	5
BUS	248	Marketing Research	3	2	4
			8	2	9

Tenth Quarter (Winter)

BUS	233	Personnel Management and Supervision	3	0	3
AOT	200	Microcomputer Operations	1	3	2
ENG	204	Oral Communications	3	0	3
			7	3	8

Eleventh Quarter (Spring)

BUS	208	Financial Statements Analysis	5	0	5
BUS	247	Insurance	5	0	5
			10	0	10

Twelfth Quarter (Summer)

BUS	229	Taxes I	3	2	4
ENG	103	Report Writing	3	0	3
ENG	206	Written Communication Skills	3	0	3
			9	2	10

		Program Totals	103	24	119*

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

BUSINESS ADMINISTRATION

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	101	Fundamentals of English	3	0	3
			9	2	10
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
MAT	110	General College Mathematics	5	0	5
			8	2	9
Third Quarter (Spring)					
ECO	105	Introduction to Economics	5	0	5
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			11	0	11
Fourth Quarter (Summer)					
AOT	100	Computer Keyboarding	1	2	2
CAS	104	Introduction to Business Data Processing	2	2	3
PSY	206	Applied Psychology	3	0	3
			6	4	8
Fifth Quarter (Fall)					
BUS	114	Business Law	5	0	5
MAT	112	Mathematics of Finance	3	2	4
			8	2	9
Sixth Quarter (Winter)					
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
			6	4	8
Seventh Quarter (Spring)					
BUS	206	Banking and Finance Credit	3	2	4
BUS	235	Business Organization and Management	3	2	4
			6	4	8
Eighth Quarter (Summer)					
BUS	123	Finance	5	0	5
ELECTIVES					
			5	0	5
Ninth Quarter (Fall)					
BUS	238	Consumer Behavior	5	0	5
ELECTIVES					
			5	0	5

			Hrs. Per Week Class	Lab	Credit Hrs.
Tenth Quarter (Winter)					
BUS	233	Personnel Management and Supervision	3	0	3
AOT	200	Microcomputer Operations	1	3	2
ENG	204	Oral Communications	3	0	3
			7	3	8
Eleventh Quarter (Spring)					
BUS	247	Insurance	5	0	5
ELECTIVES					
			5	0	5
Twelfth Quarter (Summer)					
BUS	229	Taxes I	3	2	4
ENG	103	Report Writing	3	0	3
ENG	206	Written Communication Skills	3	0	3
			9	2	10
		Program Totals	85	23	119*

*Business Administration students must take a minimum of 18 additional credit hours of business and support courses to be selected with the faculty advisor. These major course electives must be selected from the following list:

			Hrs. Per Week Class	Lab	Credit Hrs.
BUS	122	Accounting III	3	2	4
BUS	125	Introduction to Banking Fundamentals	4	0	4
BUS	164	Real Estate Law	3	0	3
BUS	165	Real Estate Brokerage Operations	3	0	3
BUS	200	Purchasing	4	0	4
BUS	208	Financial Statements Analysis	5	0	5
BUS	209	Real Estate Finance	3	0	3
BUS	222	Control Accounting	3	2	4
BUS	225	Cost Accounting I	5	0	5
BUS	236	Small Business Management	3	0	3
BUS	237	Advertising	5	0	5
BUS	240	Channels of Distribution	5	0	5
BUS	241	Retailing	3	0	3
BUS	243	International Marketing	3	0	3
BUS	249	Inventory Control	3	0	3
BUS	266	Professional Sales Techniques	3	2	4
BUS	296	Real Estate Fundamentals for Salespersons	6	0	6
ECO	107	Consumer Economics	3	0	3

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

BUSINESS COMPUTER PROGRAMMING

Associate in Applied Science Degree

(Offered Even Years)

			Hrs. Per Week		Credit Hrs.
			Class	Lab	
First Quarter (Fall)					
CAS	104	Introduction to Business Data Processing	2	2	3
ENG	100	Reading Comprehension	1	2	2
MAT	101	Algebra & Trigonometry I	5	0	5
			8	4	10
Second Quarter (Winter)					
CSC	107	Operating Systems	3	2	4
MAT	102	Algebra and Trigonometry II	5	0	5
			8	2	9
Third Quarter (Spring)					
CSC	115	Program Design and Development	4	0	4
AOT	100	Computer Keyboarding	1	2	2
CSC	208	Programming: Basic	2	2	3
			7	4	9
Fourth Quarter (Summer)					
CAS	200	Introduction to Microcomputers	2	2	3
BUS	120	Accounting I	3	2	4
ENG	101	Fundamentals of English	3	0	3
			8	4	10
Fifth Quarter (Fall)					
CAS	201	Advanced Microcomputer Applications	2	2	3
BUS	101	Introduction to Business	3	0	3
BUS	121	Accounting II	3	2	4
			8	4	10
Sixth Quarter (Winter)					
CAS	203	Data Communications and Networking	2	2	3
CSC	222	C Programming	2	2	3
MAT	160	Elementary Statistics	5	0	5
			9	4	11
Seventh Quarter (Spring)					
CSC	218	Programming I - RPG II	4	0	4
CSC	219	Programming II - RPG II	1	3	2
BUS	222	Control Accounting	3	2	4
			8	5	10
Eighth Quarter (Summer)					
ENG	102	Composition	3	0	3
MAT	112	Mathematics of Finance	3	2	4
			6	2	7
Ninth Quarter (Fall)					
CSC	215	Programming I - COBOL	4	0	4
CSC	216	Programming II - COBOL	1	3	2
BUS	234	Introduction to Management	3	2	4
			8	5	10

			Hrs. Per Week Class	Hrs. Per Week Lab	Credit Hrs.
Tenth Quarter (Winter)					
CAS	118	Database Management Concepts	3	2	4
CAS	220	Systems Analysis and Design	2	3	3
			5	5	7
Eleventh Quarter (Spring)					
CAS	160	EDP Operations	2	2	3
CAS	221	Advanced Projects	1	3	2
ENG	103	Report Writing	3	0	3
			6	5	8
Twelfth Quarter (Summer)					
ECO	102	Economics	3	0	3
ENG	204	Oral Communications	3	0	3
PSY	206	Applied Psychology	3	0	3
			9	0	9
		Program Totals	90	44	115*

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective (s) must be taken before graduation.

INDUSTRIAL MANAGEMENT TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week Class	Hrs. Per Week Lab	Credit Hrs.
First Quarter (Fall)					
BUS	120	Accounting I	3	2	4
ENG	101	Fundamentals of English	3	0	3
		ELECTIVE			
			6	2	7
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
MAT	110	General College Mathematics	5	0	5
			8	2	9
Third Quarter (Spring)					
ECO	105	Introduction to Economics	5	0	5
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			11	0	11
Fourth Quarter (Summer)					
AOT	100	Computer Keyboarding	1	2	2
EDP	104	Introduction to Business Data Processing	2	2	3
PSY	206	Applied Psychology	3	0	3
			6	4	8
Fifth Quarter (Fall)					
BUS	114	Business Law	5	0	5
ISC	105	Introduction to Production	5	0	5
			10	0	10

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Sixth Quarter (Winter)					
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
			6	4	8
Seventh Quarter (Spring)					
ISC	102	Industrial Safety	3	0	3
BUS	225	Cost Accounting I	5	0	5
BUS	249	Inventory Control	3	0	3
			11	0	11
Eighth Quarter (Summer)					
ISC	209	Plant Layout	1	4	3
MAT	160	Elementary Statistics	5	0	5
			6	4	8
Ninth Quarter (Fall)					
ISC	202	Quality Control	3	2	4
ISC	211	Time Study-Work Measurement	3	2	4
			6	4	8
Tenth Quarter (Winter)					
BUS	233	Personnel Management and Supervision	3	0	3
BUS	200	Purchasing	4	0	4
ENG	204	Oral Communications	3	0	3
		ELECTIVE			
			10	0	10
Eleventh Quarter (Spring)					
BUS	235	Business Organization and Management	3	2	4
BUS	247	Insurance	5	0	5
			8	2	9
Twelfth Quarter (Summer)					
ENG	103	Report Writing	3	0	3
ENG	206	Written Communication Skills	3	0	3
			6	0	6
		Program Totals	94	22	111*

*In addition to the previously stated required courses, a minimum of six (6) credit hours of non-major elective(s) must be taken before graduation.

MARKETING AND RETAILING

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	101	Fundamentals of English	3	0	3
			9	2	10

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
MAT	110	General College Mathematics	5	0	5
			8	2	9
Third Quarter (Spring)					
ECO	105	Introduction to Economics	5	0	5
MAT	105	Introduction to Algebra	3	0	3
ENG	102	Composition	3	0	3
			11	0	11
Fourth Quarter (Summer)					
AOT	100	Computer Keyboarding	1	2	2
CAS	104	Introduction to Business Data Processing	2	2	3
PSY	206	Applied Psychology	3	0	3
			6	4	8
Fifth Quarter (Fall)					
BUS	114	Business Law	5	0	5
MAT	112	Mathematics of Finance	3	2	4
			8	2	9
Sixth Quarter (Winter)					
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
			6	4	8
Seventh Quarter (Spring)					
BUS	237	Advertising	5	0	5
BUS	243	International Marketing	3	0	3
			8	0	8
Eighth Quarter (Summer)					
BUS	123	Finance	5	0	5
BUS	206	Banking and Finance Credit	3	2	4
			8	2	9
Ninth Quarter (Fall)					
BUS	238	Consumer Behavior	5	0	5
BUS	248	Marketing Research	3	2	4
			8	2	9
Tenth Quarter (Winter)					
BUS	233	Personnel Management and Supervision	3	0	3
AOT	200	Microcomputer Operations	1	3	2
ENG	204	Oral Communications	3	0	3
			7	3	8
Eleventh Quarter (Spring)					
BUS	241	Retailing	3	0	3
BUS	247	Insurance	5	0	5
BUS	266	Professional Sales Techniques	3	2	4
			11	2	12

			Hrs. Per Week Class	Lab	Credit Hrs.
Twelfth Quarter (Summer)					
BUS	229	Taxes I	3	2	4
ENG	103	Report Writing	3	0	3
ENG	206	Written Communication Skills	3	0	3
			9	2	10
		Program Totals	99	25	116*

In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

REAL ESTATE (TECHNICAL SPECIALTY)

The Real Estate (Technical Specialty) curriculum is designed to prepare the individual for a particular technical skill in the real estate industry. Provisions may also be made for training required to apply for the North Carolina Real Estate Licensing Examination.

The main objective of the curriculum is to provide a program of continuing education for the individual currently in the real estate field or related fields. Study and related subject areas are emphasized.

Employment opportunities are available in the real estate industry or related industries as salesperson or broker.

Job Opportunities

Real Estate Salesperson
Real Estate Broker

REAL ESTATE (TECHNICAL SPECIALTY)
Certificate

(Offered Evenings Only)

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
BUS	296	Real Estate Fundamentals for Salespersons	6	0	6
MAT	111	Real Estate Mathematics	3	0	3
			9	0	9
Second Quarter (Winter)					
BUS	164	Real Estate Law	3	0	3
BUS	165	Real Estate Brokerage Operations	3	0	3
			6	0	6
Third Quarter (Spring)					
BUS	209	Real Estate Finance	3	0	3
			3	0	3
		Program Totals	18	0	18

REAL ESTATE APPRAISAL

The purpose of the Real Estate Appraisal curriculum is to provide the prelicensing and the pre-certification appraisal education requirements approved by the North Carolina Real Estate Commission.

The courses required by the North Carolina Real Estate Commission for prelicensing as a *State-licensed* appraiser are covered in this curriculum. These courses are Introduction of Real Estate Appraisal, Valuation Principles and Procedures, and Applied Residential Property Valuation.

The courses required by the North Carolina Real Estate Commission for pre-certification as a *State-certified* appraiser are also provided. These courses are Introduction to Income Property Appraisal, Advanced Income Capitalization Procedures, and Applied Income Property Valuation. A good math background is very important in this curriculum. It is recommended that a student have mastered competencies found in a basic algebra course before taking Advanced Income Capitalization Procedures.

The courses required for the *State-licensed* appraiser and the *State-certified* appraiser must be completed in sequential order.

In addition to meeting the education requirements to become a *State-licensed* appraiser and/or a *State-certified* appraiser, an individual must pass the appraisal examinations given by the North Carolina Real Estate Commission and meet the appraisal experience requirements. A *State-licensed* or *State-certified* appraiser will be able to identify himself or herself to the public as being state licensed and/or state certified, and will be qualified to perform appraisals in federally-related transactions.

Job Opportunities

State-licensed Appraiser
State-certified Appraiser

REAL ESTATE APPRAISAL

Certificate

(Offered Evenings Only)

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
BUS	170	Introduction to Real Estate Appraisal	3	0	3
BUS	171	Valuation Principles and Procedures	3	0	3
			6	0	6
Second Quarter (Winter)					
BUS	172	Applied Residential Property Valuation	3	0	3
BUS	270	Introduction to Income Property Appraisal	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			9	0	9

Third Quarter (Spring)

BUS	271	Advanced Income Capitalization Procedures	3	0	3
BUS	272	Applied Property Valuation	3	0	3
			6	0	6
		Program Totals	21	0	21

Note: All courses with BUS prefixes will be offered on a 5 1/2 week schedule to permit courses to be completed in sequence.

EVENING PROGRAMS IN ENGINEERING AND APPLIED TECHNOLOGY

AIR CONDITIONING, HEATING, AND REFRIGERATION

Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
AHR	1124A	Principles of Heating Fuels and Burners	2	0	4	3
ELC	1117	Basic Electricity	3	2	0	4
MAT	1101A	Fundamentals of Mathematics	4	0	0	4
			9	2	4	11
Second Quarter (Winter)						
AHR	1123A	Principles of Air Conditioning	3	0	3	4
AHR	1124B	Principles of Heating: Fuels and Burners	0	0	2	1
BPR	1116	Blueprint Reading: Air Conditioning	2	2	0	3
MAT	1101B	Fundamentals of Mathematics	1	0	0	1
MAT	1103	Geometry	3	0	0	3
			9	2	5	12
Third Quarter (Spring)						
AHR	1123B	Principles of Air Conditioning	0	0	6	2
ELN	105	Industrial Electronics	1	0	3	2
WLD	1101	Basic Welding	1	2	0	2
			2	2	9	6
Fourth Quarter (Summer)						
AHR	1121A	Fundamentals of Refrigeration: Domestic	2	0	6	4
PHY	1101	Applied Science I	3	2	0	4
			5	2	6	8

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Fifth Quarter (Fall)						
AHR	1121B	Fundamentals of Refrigeration: Domestic	1	0	6	3
ELC	1118	Applied Electricity	3	2	0	4
ENG	100	Reading Comprehension	1	2	0	2
			5	4	6	9
Sixth Quarter (Winter)						
AHR	1122A	Fundamentals of Refrigeration: Commercial	2	0	6	4
AHR	1127	Duct Construction and Maintenance	2	0	6	4
			4	0	12	8
Seventh Quarter (Spring)						
AHR	1122B	Fundamentals of Refrigeration: Commercial	1	0	6	3
ENG	1102	Communication Skills	3	0	0	3
PSY	1101	Human Relations	3	0	0	3
			7	0	6	9
Eighth Quarter (Summer)						
AHR	1126	All Year Comfort Systems and A.C. Servicing	2	0	9	5
BUS	1103	Small Business Operations	3	0	0	3
			5	0	9	8
		Program Totals	46	12	57	71

AUTOMOTIVE MECHANICS

The Automotive Mechanics curriculum provides a training program for developing the basic knowledge and skills needed to inspect, diagnose, repair and adjust automotive vehicles. Manual skills are developed in practical shop work and the technical understanding of the operating principles involved in the modern automobile are taught through class assignments, discussions, and shop practices.

Automobile mechanics maintain and repair mechanical, electrical, and body parts of passenger cars, trucks, and buses. In some communities and rural areas, they also may service tractors or marine engines and other gasoline-powered equipment. Mechanics inspect and test to determine the causes of faulty operation. They repair or replace defective parts to restore the vehicle or machine to proper operating condition and use shop manuals and other technical publications as references for technical data. Persons completing this curriculum may find employment with franchised automobile dealers, independent garages, or may start their own business.

Job Opportunities

Entry Level	Advanced Level
General Mechanic	Shop Supervisor
Tune-up Mechanic	Shop Foreman
Front-end Specialist	
Automatic Transmission Specialist	
Brake Specialist	

Diploma

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
First Quarter (Fall)						
AUT	1101A	Internal Combustion Engine	3	0	3	4
BPR	1108	Basic Mechanical Blueprint Reading	1	2	0	2
MAT	1101A	Fundamentals of Mathematics	4	0	0	4
			8	2	3	10
Second Quarter (Winter)						
AUT	1101B	Internal Combustion Engine	3	0	3	4
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101B	Fundamentals of Mathematics	1	0	0	1
			5	2	3	7
Third Quarter (Spring)						
AUT	1102	Engine Electrical and Fuel Systems	6	0	6	8
AUT	1123A	Automotive Chassis and Suspension Systems	1	0	3	2
			7	0	9	10
Fourth Quarter (Summer)						
AUT	1123B	Automotive Chassis Suspension Systems	2	0	3	3
PHY	1101	Applied Science I	3	2	0	4
			5	2	3	7
Fifth Quarter (Fall)						
AUT	1121	Braking Systems	2	0	3	3
ENG	1102	Communications Skills	3	0	0	3
PSY	1101	Human Relations	3	0	0	3
			8	0	3	9
Sixth Quarter (Winter)						
AUT	1124	Automotive Power Train Systems	4	0	6	6
			4	0	6	6
Seventh Quarter (Spring)						
AUT	1122	Automotive Electronics and Control Systems	4	2	0	5
AUT	1128	Automotive Air Conditioning	2	2	0	3
BUS	1103	Small Business Operations	3	0	0	3
(ECO	1107	Consumer Economics	(3)	(0)	(0)	(3)
			9	4	0	11
Eighth Quarter (Summer)						
AUT	1125	Automotive Servicing	6	0	6	8
			6	0	6	8
		Program Totals	52	10	33	68

CARPENTRY AND CABINETMAKING

Diploma

(Sequence for Odd Years)

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
CAR	1101A	Carpentry I	4	0	3	5
BPR	1107	Blueprint Reading-Construction Trades	1	2	0	2
MAT	1101A	Fundamentals of Mathematics	4	0	0	4
			9	2	3	11
Second Quarter (Winter)						
CAR	1103A	Carpentry II	3	0	6	5
BPR	1109	Blueprint Reading-Construction Trades	1	2	0	2
MAT	1101B	Fundamentals of Mathematics	1	0	0	1
MAT	1103	Geometry	3	0	0	3
			8	2	6	11
Third Quarter (Spring)						
CAR	1103B	Carpentry II	3	0	9	6
DFT	1127	Construction Trades-Drafting I	2	2	0	3
			5	2	9	9
Fourth Quarter (Summer)						
CAR	1105A	Advanced Carpentry Projects	1	0	12	5
DFT	1128	Construction Trades-Drafting II	2	2	0	3
			3	2	12	8
Fifth Quarter (Fall)						
CAR	1101B	Carpentry I	1	0	3	2
CAR	1102A	Cabinetmaking I	3	0	9	6
			4	0	12	8
Sixth Quarter (Winter)						
CAR	1102B	Cabinetmaking I	2	0	6	4
ENG	100	Reading Comprehension	1	2	0	2
PSY	1101	Human Relations	3	0	0	3
			6	2	6	9
Seventh Quarter (Spring)						
CAR	1104	Cabinetmaking II	0	0	9	3
ENG	1102	Communication Skills	3	0	0	3
			3	0	9	6
Eighth Quarter (Summer)						
CAR	1105B	Advanced Carpentry Projects	1	0	12	5
BUS	1103	Small Business Operations	3	0	0	3
			4	0	12	8
		Program Totals	42	10	69	70

CARPENTRY AND CABINETMAKING

Diploma

(Sequence for Even Years)

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
First Quarter (Fall)						
CAR	1102A	Cabinetmaking I	3	0	9	6
BPR	1107	Blueprint Reading-Construction Trades	1	2	0	2
			4	2	9	8
Second Quarter (Winter)						
CAR	1102B	Cabinetmaking I	2	0	6	4
ENG	100	Reading Comprehension	1	2	0	2
PSY	1101	Human Relations	3	0	0	3
			6	2	6	9
Third Quarter (Spring)						
CAR	1104	Cabinetmaking II	0	0	9	3
ENG	1102	Communication Skills	3	0	0	3
			3	0	9	6
Fourth Quarter (Summer)						
CAR	1105A	Advanced Carpentry Projects	1	0	12	5
BUS	1103	Small Business Operations	3	0	0	3
			4	0	12	8
Fifth Quarter (Fall)						
CAR	1101	Carpentry I	5	0	6	7
MAT	1101A	Fundamentals of Mathematics	4	0	0	4
			9	0	6	11
Sixth Quarter (Winter)						
CAR	1103A	Carpentry II	3	0	6	5
BPR	1109	Blueprint Reading-Construction Trades	1	2	0	2
MAT	1101B	Fundamentals of Mathematics	1	0	0	1
MAT	1103	Geometry	3	0	0	3
			8	2	6	11
Seventh Quarter (Spring)						
CAR	1103B	Carpentry II	3	0	9	6
DFT	1127	Construction Trades-Drafting I	2	2	0	3
			5	2	9	9
Eighth Quarter (Summer)						
CAR	1105B	Advanced Carpentry Projects	1	0	12	5
DFT	1128	Construction Trades-Drafting II	2	2	0	3
			3	2	12	8
		Program Totals	42	10	69	70

CIVIL ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

(Offered odd years)

			Hrs. Per Week		Credit Hrs.
			Class	Lab	
First Quarter (Fall)					
DFT	110	Engineering Graphics	2	4	4
MAT	101	Algebra and Trigonometry I	5	0	5
			7	4	9
Second Quarter (Winter)					
CIV	217	Introduction to Construction Technology	2	6	4
EGR	105	Calculator Operation	0	2	1
MAT	102	Algebra and Trigonometry II	5	0	5
			7	8	10
Third Quarter (Spring)					
CIV	202	Properties of Soils	2	2	3
CAS	105	Introduction to Scientific Data Processing	2	2	3
MAT	103	Analytical Geometry and Calculus	5	0	5
			9	4	11
Fourth Quarter (Summer)					
SUR	101	Surveying I	2	6	4
CHM	102	Engineering Chemistry	2	2	3
ENG	101	Fundamentals of English	3	0	3
			7	8	10
Fifth Quarter (Fall)					
SUR	102	Surveying II	2	6	4
PHY	111	Physics I -Mechanics	3	2	4
			5	8	8
Sixth Quarter (Winter)					
DFT	104	Civil Drafting	2	4	4
PHY	112	Physics II-Rotation and Matter	3	2	4
			5	6	8
Seventh Quarter (Spring)					
CIV	114	Statics	5	0	5
DFT	220	Computer Aided Drafting	1	6	3
			6	6	8
Eighth Quarter (Summer)					
CIV	216	Strength of Materials	5	0	5
CIV	221	Asphalt	2	2	3
SUR	210	Construction Surveying	1	3	2
			8	5	10
Ninth Quarter (Fall)					
CIV	218	Properties of Plain Portland Concrete	2	2	3
CIV	223	Codes, Contracts, and Specifications	2	2	3
CIV	225	Construction Estimating	2	4	4
			6	8	10

Tenth Quarter (Winter)					
CIV	219	Steel and Timber Construction	2	4	4
CIV	228	Relations and Ethics	1	3	2
CIV	231	Hydrology	2	2	3
			5	9	9
Eleventh Quarter (Spring)					
CIV	220	Project Planning	2	2	3
CIV	224	Reinforced Portland Concrete	2	2	3
CIV	230	Hydraulics	2	2	3
ENG	102	Composition	3	0	3
			9	6	12
Twelfth Quarter (Summer)					
CIV	232	Water and Waste Treatment	2	2	3
ENG	204	Oral Communications	3	0	3
SOC	201	Social Problems	3	0	3
			8	2	9
Thirteenth Quarter (Fall)					
ENG	103	Report Writing	3	0	3
PSY	206	Applied Psychology	3	0	3
			6	0	6
		Program Totals	88	74	125*

In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

DRAFTING AND DESIGN ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

(Offered Odd Years)

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
DFT	101	Drafting	2	4	4
MAT	101	Algebra and Trigonometry I	5	0	5
			7	4	9
Second Quarter (Winter)					
DFT	102	Drafting	2	4	4
MAT	102	Algebra and Trigonometry II	5	0	5
			7	4	9
Third Quarter (Spring)					
DFT	204	Descriptive Geometry	1	6	3
MAT	204	Applied Mathematics	5	0	5
			6	6	8
Fourth Quarter (Summer)					
MEC	111	Manufacturing Processes	3	3	4
PHY	111	Physics I - Mechanics	3	2	4
			6	5	8

Fifth Quarter (Fall)

DFT	103	Drafting	2	4	4
PHY	112	Physics II - Rotation and Matter	3	2	4
			5	6	8

Sixth Quarter (Winter)

DFT	201	Design Drafting I	2	6	4
ENG	101	Fundamentals of English	3	0	3
SOC	201	Social Problems	3	0	3
			8	6	10

Seventh Quarter (Spring)

DFT	205	Design Drafting II	2	6	4
DFT	220	Computer-Aided Drafting	1	6	3
			3	12	7

Eighth Quarter (Summer)

DFT	211	Mechanisms and Kinematic Design	2	6	4
MEC	101	Machine Processes	2	4	4
			4	10	8

Ninth Quarter (Fall)

DFT	222	Computer Aided Manufacturing	2	6	4
ENG	102	Composition	3	0	3
PSY	206	Applied Psychology	3	0	3
			8	6	10

Tenth Quarter (Winter)

DFT	206	Design Drafting III	2	6	4
PHY	113	Physics III - Electricity and Magnetism	3	2	4
			5	8	8

Eleventh Quarter (Spring)

DFT	221	Advanced Computer-Aided Drafting and Design	1	6	3
MEC	230	Industrial Motor Controls	4	2	5
			5	8	8

Twelfth Quarter (Summer)

MEC	105	Statics	5	0	5
MEC	211	Engineering Materials	3	3	4
			8	3	9

Thirteenth Quarter (Fall)

MEC	205	Strength of Materials	5	0	5
MEC	235	Hydraulics and Pneumatics	3	3	4
			8	3	9

Fourteenth Quarter (Winter)

CAS	105	Introduction to Scientific Data Processing	2	2	3
ENG	103	Report Writing	3	0	3
ENG	204	Oral Communications	3	0	3
			8	2	9
		Program Totals	88	83	125 *

***MAT 103 may be substituted for MAT 204.**

In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken.

ELECTRONICS ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

This program, at night, is designed with two quarters of mathematics scheduled before entrance into major area electronic courses. With this plan, we hope to prepare the student for greater success in the study of Electronics Technology.

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
DFT	110	Engineering Graphics	2	4	4
MAT	101	Algebra and Trigonometry I	5	0	5
			7	4	9
Second Quarter (Winter)					
ELN	110	Technical Documentation	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
			9	2	10
Third Quarter (Spring)					
ELN	101	Fundamentals of D.C.	4	4	6
MAT	103	Analytical Geometry and Calculus	5	0	5
(MAT	151	Calculus and Analytic Geometry	(5	0	5)
			9	4	11
Fourth Quarter (Summer)					
ELN	102	Fundamentals of A.C.	4	4	6
PHY	111	Physics I - Mechanics	3	2	4
			7	6	10
Fifth Quarter (Fall)					
ELN	104	Semiconductor Devices	4	4	6
PHY	112	Physics II-Rotation and Matter	3	2	4
			7	6	10
Sixth Quarter (Winter)					
ELN	111	Fabrication Techniques	1	4	3
ELN	201	Linear Integrated Circuits	4	4	6
			5	8	9
Seventh Quarter (Spring)					
ELN	202	Communications Systems	4	4	6
CSC	222	C Programming	2	2	3
ENG	102	Composition	3	0	3
			9	6	12
Eighth Quarter (Summer)					
ELN	203	Digital Fundamentals	4	4	6
ECO	102	Economics I	3	0	3
ENG	204	Oral Communications	3	0	3
			10	4	12

Ninth Quarter (Fall)

ELN	204	Digital Applications	4	4	6
PHY	114	Physics IV - Light, Sound and Wave Phenomena	3	2	4
			7	6	10

Tenth Quarter (Winter)

ELN	210	Analytic Troubleshooting	1	2	2
ELN	223	Microprocessor Principles	4	4	6
PSY	206	Applied Psychology	3	0	3
			8	6	11

Eleventh Quarter (Spring)

ELN	224	Microprocessor Interfacing	4	4	6
DFT	220	Computer Aided Drafting	1	6	3
			5	10	9

Twelfth Quarter (Summer)

ELN	225	Industrial Controls	4	4	6
CHM	102	Engineering Chemistry	2	2	3
ENG	103	Report Writing	3	0	3
			9	6	12
		Program Totals	92	68	128*

*In addition to the previously stated required courses, a minimum of three (3) credit hours of non-major elective(s) must be taken before graduation.

ELECTRONIC SERVICING

The curriculum in Electronic Servicing is designed to provide basic knowledge and skills required in the installation, maintenance and servicing of electronic components and systems. Laboratory time will be spent verifying electronic theory and principles, learning installation, maintenance, and service techniques.

An electronic service technician will be able to install, maintain, and service electronic equipment including radios, television, audio/video recording and playback equipment, home entertainment systems, digital electronic systems, Master Antenna Television and Cable Television components and systems.

Job Opportunities

Electronic Service Technician
Audio/Video Service Technician
Radio Service Technician
Television Service Technician

ELECTRONIC SERVICING

Diploma

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
First Quarter (Fall)						
ELN	1120	Direct and Alternating Current	2	6	0	5
MAT	1101	Fundamentals of Mathematics	5	0	0	5
			7	6	0	10
Second Quarter (Winter)						
ELN	1121	Direct and Alternating Current	2	10	0	7
PSY	1101	Human Relations	3	0	0	3
			5	10	0	10
Third Quarter (Spring)						
ELN	1122	Solid State Devices	4	4	0	6
ELN	210	Analytical Troubleshooting	2	2	0	3
			6	6	0	9
Fourth Quarter (Summer)						
ELN	1123	Digital Circuits	4	4	0	6
PHY	1101	Applied Science	3	2	0	4
			7	6	0	10
Fifth Quarter (Fall)						
ELN	111	Fabrication	1	6	0	4
ENG	1102	Communication Skills	3	0	0	3
			4	6	0	7
Sixth Quarter (Winter)						
ELN	1124	Audio Servicing	5	10	0	10
			5	10	0	10
Seventh Quarter (Spring)						
ELN	1125	Video Servicing	5	10	0	10
			5	10	0	10
			39	54	0	66

MACHINIST

Diploma

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
First Quarter (Fall)						
MES	1101A	Machine Shop I	2	0	6	4
BPR	1104	Blueprint Reading: Mechanical	1	2	0	2
MAT	1101A	Fundamentals of Mathematics	4	0	0	4
			7	2	6	10
Second Quarter (Winter)						
MES	1101B	Machine Shop I	1	0	6	3
BPR	1105	Blueprint Reading: Mechanical	1	2	0	2
MAT	1101B	Fundamentals of Mathematics	1	0	0	1
MAT	1103	Geometry	3	0	0	3
			6	2	6	9

Third Quarter (Spring)

MES	1102A	Machine Shop II	1	0	6	3
BPR	1106	Blueprint Reading: Mechanical	1	2	0	2
MAT	1104	Trigonometry	3	0	0	3
			5	2	6	8

Fourth Quarter (Summer)

MES	1102B	Machine Shop II	2	0	6	4
ENG	100	Reading Comprehension	1	2	0	2
MAT	1123	Machinist Mathematics	3	0	0	3
			6	2	6	9

Fifth Quarter (Fall)

MES	1103A	Machine Shop III	2	0	6	4
ENG	1102	Communication Skills	3	0	0	3
PSY	1101	Human Relations	3	0	0	3
			8	0	6	10

Sixth Quarter (Winter)

MES	1103B	Machine Shop III	1	0	6	3
PHY	1100	Industrial Science	3	2	0	4
			4	2	6	7

Seventh Quarter (Spring)

MES	1104	Machine Shop IV	2	0	6	4
BUS	1103	Small Business Operations	3	0	0	3
(ECO	1107	Consumer Economics)	(3)	(0)	(0)	(3)
WLD	1101	Basic Welding	1	2	0	2
			6	2	6	9

Eighth Quarter (Summer)

MES	1107	Introduction to Computer Numerical Control	4	4	0	6
MEC	1115	Ferrous/Non-Ferrous Metals	1	0	3	2
			5	4	3	8
		Program Totals	47	16	45	70

MECHANICAL ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

(Offered Even Years)

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
DFT	110	Engineering Graphics	2	4	4
MAT	101	Algebra and Trigonometry I	5	0	5
			7	4	9
Second Quarter (Winter)					
MEC	211	Engineering Materials	3	3	4
MAT	102	Algebra and Trigonometry II	5	0	5
			8	3	9

Third Quarter (Spring)

CAS	105	Introduction to Scientific Data Processing	2	2	3
ENG	101	Fundamentals of English	3	0	3
MAT	103	Analytical Geometry and Calculus	5	0	5
			10	2	11

Fourth Quarter (Summer)

MEC	111	Manufacturing Processes I	3	3	4
PHY	111	Physics I - Mechanics	3	2	4
			6	5	8

Fifth Quarter (Fall)

PHY	112	Physics II - Rotation and Matter	3	2	4
PSY	206	Applied Psychology	3	0	3
TDT	105	Manufacturing Cost Analysis	1	2	2
			7	4	9

Sixth Quarter (Winter)

DFT	220	Computer Aided Drafting	1	6	3
PHY	113	Physics III - Electricity and Magnetism	3	2	4
			4	8	7

Seventh Quarter (Spring)

MEC	230	Industrial Motor Controls	4	2	5
ENG	102	Composition	3	0	3
TDT	101	Geometric Tolerances and Inspection Procedures	1	3	2
			8	5	10

Eighth Quarter (Summer)

MEC	105	Statics	5	0	5
DFT	221	Advanced Computer Aided Drafting and Design	1	6	3
			6	6	8

Ninth Quarter (Fall)

MEC	205	Strength of Materials	5	0	5
MEC	235	Hydraulics and Pneumatics	3	3	4
			8	3	9

Tenth Quarter (Winter)

MEC	112	Manufacturing Processes II	3	3	4
MEC	206	Dynamics	4	0	4
ENG	204	Oral Communications	3	0	3
			10	3	11

Eleventh Quarter (Spring)

MEC	212	Automation I	4	4	6
MEC	216	Vibrational Analysis and Preventive Maintenance	4	4	6
			8	8	12

Twelfth Quarter (Summer)

MEC	208	Machine Design	3	3	4
MEC	214	Automation II	3	4	5
			6	7	9

Thirteenth Quarter (Fall)

MEC	110	Supervised Work Experience	0	30	3
ENG	107	Technical Composition	3	0	3
			3	30	6

Fourteenth Quarter (Winter)

ENG	103	Report Writing	3	0	3
			3	0	3
		Program Totals	94	88	126*

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

SURVEYING TECHNOLOGY

Associate in Applied Science Degree
(Offered odd years)

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
DFT	110	Engineering Graphics	2	4	4
MAT	101	Algebra and Trigonometry I	5	0	5
			7	4	9
Second Quarter (Winter)					
CIV	217	Introduction to Construction Technology	2	6	4
EGR	105	Calculator Operation	0	2	1
MAT	102	Algebra and Trigonometry II	5	0	5
			7	8	10
Third Quarter (Spring)					
CIV	202	Properties of Soils	2	2	3
EDP	105	Introduction to Scientific Data Processing	2	2	3
MAT	103	Analytical Geometry and Calculus	5	0	5
			9	4	11
Fourth Quarter (Summer)					
SUR	101	Surveying I	2	6	4
ENG	101	Fundamentals of English	3	0	3
SOC	201	Social Problems	3	0	3
			8	6	10
Fifth Quarter (Fall)					
SUR	102	Surveying II	2	6	4
PHY	114	Physics IV-Light, Sound and Wave Phenomena	3	2	4
			5	8	8
Sixth Quarter (Winter)					
DFT	104	Civil Drafting	2	4	4
PHY	113	Physics III - Electricity and Magnetism	3	2	4
			5	6	8

Seventh Quarter (Spring)					
SUR	206	Equipment Calibration	1	3	2
SUR	209	Surveying Law	4	0	4
DFT	220	Computer Aided Drafting	1	6	3
			6	9	9
Eighth Quarter (Summer)					
SUR	103	Route Surveying	2	6	4
SUR	210	Construction Surveying	1	3	2
ENG	102	Composition	3	0	3
			6	9	9
Ninth Quarter (Fall)					
SUR	104	Topographic Surveys/Photogrammetry	2	6	4
CIV	223	Codes, Contracts, and Specifications	2	2	3
			4	8	7
Tenth Quarter (Winter)					
CIV	228	Relations and Ethics	1	3	2
CIV	231	Hydrology	2	2	3
PSY	206	Applied Psychology	3	0	3
			6	5	8
Eleventh Quarter (Spring)					
SUR	205	Surveying Research	1	3	2
SUR	207	Field and Office Practice	1	3	2
CIV	220	Project Planning	2	2	3
CIV	230	Hydraulics	2	2	3
			6	10	10
Twelfth Quarter (Summer)					
SUR	204	Advanced Surveying	2	6	4
SUR	214	Subdivision Planning	2	6	4
			4	12	8
Thirteenth Quarter (Fall)					
SUR	215	Senior Project	0	6	2
ENG	103	Report Writing	3	0	3
ENG	204	Oral Communications	3	0	3
			6	6	8
		Program Totals	79	95	120*

*In addition to the previously stated required courses, a minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

TOOL DESIGN TECHNOLOGY

Associate in Applied Science Degree
(Offered Even Years)

Notice: At this time, the Associate in Applied Science degree is not available in this program. However, a Certificate in Tool Design Technology will be awarded upon successful completion of the courses listed below. These courses will be available on an evening schedule as indicated.

Quarter	Courses
Fall	TDT 201, DFT 220
Winter	TDT 101, TDT 202
Spring	TDT 203, DFT 221

The Tool Design Technology certificate program may be of special interest to graduates of the Tool, Die and Mold Making program. General Education and Related courses are available, and students are encouraged to take these in support of the certificate courses.

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
DFT	101	Drafting	2	4	4
MAT	101	Algebra and Trigonometry I	5	0	5
			7	4	9
Second Quarter (Winter)					
DFT	102	Drafting	2	4	4
MAT	102	Algebra and Trigonometry II	5	0	5
			7	4	9
Third Quarter (Spring)					
DFT	204	Descriptive Geometry	1	6	3
MAT	204	Applied Mathematics	5	0	5
			6	6	8
Fourth Quarter (Summer)					
MEC	101	Machine Processes	2	4	4
PHY	111	Physics I - Mechanics	3	2	4
			5	6	8
Fifth Quarter (Fall)					
TDT	105	Manufacturing Cost Analysis	1	2	2
DFT	103	Drafting	2	4	4
PHY	112	Physics II - Rotation and Matter	3	2	4
			6	8	10
Sixth Quarter (Winter)					
MEC	111	Manufacturing Processes I	3	3	4
PHY	113	Physics III - Electricity and Magnetism	3	2	4
			6	5	8
Seventh Quarter (Spring)					
CAS	105	Introduction to Scientific Data Processing	2	2	3
TDT	101	Geometric Tolerances and Inspection Procedures	1	3	2
			3	5	5
Eighth Quarter (Summer)					
DFT	220	Computer Aided Drafting	1	6	3
MEC	105	Statics	5	0	5
			6	6	8
Ninth Quarter (Fall)					
MEC	205	Strength of Materials	5	0	5
MEC	235	Hydraulics and Pneumatics	3	3	4
			8	3	9

Tenth Quarter (Winter)

TDT	201	Tool Design I	2	6	4
ENG	101	Fundamentals of English	3	0	3
MEC	206	Dynamics	4	0	4
			9	6	11

Eleventh Quarter (Spring)

TDT	202	Tool Design II	2	6	4
ENG	102	Composition	3	0	3
PSY	206	Applied Psychology	3	0	3
			8	6	10

Twelfth Quarter (Summer)

TDT	203	Tool Design III	2	6	4
ENG	103	Report Writing	3	0	3
MEC	213	Machine Design	2	2	3
			7	8	10

Thirteenth Quarter (Fall)

TDT	204	CAD/CAM Operations in Automation	2	6	4
ENG	204	Oral Communications	3	0	3
SOC	201	Social Problems	3	0	3
			8	6	10

Fourteenth Quarter (Winter)

TDT	210	Introduction to CNC and Robotic Applications	3	3	4
DFT	221	Advanced Computer-Aided Drafting and Design	1	6	3
			4	9	7
		Program Totals	90	82	127*

*In addition to the previously stated required courses, minimum of five (5) credit hours of non-major elective(s) must be taken before graduation.

TOOL, DIE AND MOLD MAKING

Associate of Tool and Die--Technical Diploma

(Offered Even Years)

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
TDM	1201A	Machine Processes	2	0	6	4
MAT	1203	Trigonometry	3	0	0	3
			5	0	6	7
Second Quarter (Winter)						
TDM	1201B	Machine Processes	1	0	6	3
MAT	1204	Compound Angles	3	0	0	3
			4	0	6	6
Third Quarter (Spring)						
TDM	1202A	Machine Processes	2	0	6	4
BPR	1208A	Blueprint Reading: Tool & Die	1	0	0	1
DFT	1207	General Machine Drafting	2	4	0	4
			5	4	6	9

Fourth Quarter (Summer)						
TDM	1202B	Machine Processes	1	0	6	3
BPR	1208B	Blueprint Reading: Tool & Die	0	4	0	2
MEC	1203	Metallurgy	3	0	0	3
			4	4	6	8
Fifth Quarter (Fall)						
TDM	1204A	Machine Processes	2	0	6	4
ELC	1201	Electricity - Industrial	2	2	0	3
MEC	1209	Hydraulics and Pneumatics	3	0	0	3
			7	2	6	10
Sixth Quarter (Winter)						
TDM	1204B	Machine Processes	1	0	6	3
TDM	1205	Fundamentals of Mold Construction	3	2	0	4
			4	2	6	7
Seventh Quarter (Spring)						
TDM	1206A	Machine Processes	2	0	6	4
TDM	1207	Special Problems & Molding	3	4	0	5
			5	4	6	9
Eighth Quarter (Summer)						
TDM	1206B	Machine Processes	1	0	6	3
DFT	1209	Tool Design & Planning	2	4	0	4
			3	4	6	7
		Program Totals	37	20	48	63

WELDING

Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
WLD	1120	Oxyacetylene Welding & Cutting	3	0	12	7
			3	0	12	7
Second Quarter (Winter)						
WLD	1121	Arc Welding	3	0	12	7
			3	0	12	7
Third Quarter (Spring)						
WLD	1122	Commercial & Industrial Practices	3	0	9	6
WLD	1123	Inert Gas Welding	1	0	3	2
			4	0	12	8

Fourth Quarter (Summer)

WLD	1112	Mechanical Testing and Inspection	1	0	3	2
WLD	1124A	Pipe Welding	2	0	6	4
BPR	1108	Basic Mechanical Blueprint Reading	1	2	0	2
			4	2	9	8

Fifth Quarter (Fall)

WLD	1124B	Pipe Welding	1	0	6	3
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101A	Fundamentals of Mathematics	4	0	0	4
			6	2	6	9

Sixth Quarter (Winter)

WLD	1125	Certification Practices	3	0	6	5
MAT	1101B	Fundamentals of Mathematics	1	0	0	1
MAT	1103	Geometry	3	0	0	3
MEC	1124	Metallurgy	3	0	0	3
			10	0	6	12

Seventh Quarter (Spring)

ELC	1119	Electricity for Welders	3	2	0	4
ENG	1102	Communication Skills	3	0	0	3
PSY	1101	Human Relations	3	0	0	3
			9	2	0	10

Eighth Quarter (Summer)

BPR	1117	Blueprint Reading: Welding	1	2	0	2
(ECO	1107	Consumer Economics)	(3)	(0)	(0)	(3)
BUS	1103	Small Business Operations	3	0	0	3
DFT	1126	Pattern Development and Layout	0	3	0	1
MES	1112	Machine Shop Processes	1	0	3	2
			5	5	3	8
		Program Totals	44	11	60	69

***Students who have not completed the Machinist curriculum must also take ENG 1102 and PSY 1101. Total program credit hours 69.**

EVENING PROGRAMS IN COLLEGE TRANSFER

CURRICULUM REQUIREMENTS FOR THE

Associate in Arts (A.A.) Degree

Requirements (67 Quarters Hours)	**Quarter Hours**
Communications ENG 150, 151, 152	9
Computing	3
Humanities and Fine Arts ENG 204 and courses selected from Art, English, History, Music, and Philosophy	18
Mathematics Courses should be selected according to proposed major. MAT 101 is required.	10
Science Courses selected must include one (1) three-quarter sequence of a laboratory science. Options include transfer courses in biology, chemistry, and physics. Science course sequences may consist of : • Biology: BIO 101, 102, 103, or BIO 201 and any two of the following: BIO 202, 203, 204, 205 • Chemistry: CHM 150, 151, 152, CHM 200, 201, 202, or CHM 210, 211, 212 • Physics: Three of the following four courses - PHY 111, 112, 113, 114, or PHY 201, 202, 203 Note: The recommended sequences are Underlined.	12
Social Science Courses selected from Anthropology, Geography, Political Science, Psychology, and Sociology	12

Physical Education	3
Required Electives	29
Preprofessional Cognate* or General Courses	
Total Quarter Hours	96

*These preprofessional cognate and general courses should be selected carefully and in coordination with the senior institution.

Major area courses for college transfer programs are defined as courses offered by the General Education Division and require a minimum grade of C for all courses submitted for graduation.

ASSOCIATE IN ARTS DEGREE

Evening Program Model of Quarterly Course Sequence*

			Hrs Per Week Class	Hrs Per Week Lab	Credit Hrs.
First Quarter (Fall)					
ENG	150	Grammar and Composition	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
PED		Physical Education Elective	0	3	1
SOC		Social Science Elective	3	0	3
			11	3	12
Second Quarter (Winter)					
ENG	151	Composition and Introduction to Literature	3	0	3
MAT		Mathematics Elective	5	0	5
PED		Physical Education Elective	0	3	1
SOC		Social Science Elective	3	0	3
			11	3	12
Third Quarter (Spring)					
CAS	101	Introduction to Computing Concepts	2	2	3
ENG	152	Composition, Research, and Documentation	3	0	3
PED		Physical Education Elective	0	3	1
SOC		Social Science Elective	3	0	3
			8	5	10
Fourth Quarter (Fall)					
GEN		General Elective	3	0	3
HUM		Humanities Elective	3	0	3
SCI		Science Sequence - Course I	3	3	4
			9	3	10
Fifth Quarter (Winter)					
GEN		General Elective	3	0	3
HUM		Humanities Elective	3	0	3
SCI		Science Sequence - Course II	3	3	4
			9	3	10

Sixth Quarter (Spring)

ENG	204	Oral Communications	3	0	3
HUM		Humanities Elective	3	0	3
SCI		Science Sequence - Course III	3	3	4
			9	3	10

Seventh Quarter (Fall)

GEN	General Electives	6	0	6
HUM	Humanities Elective	3	0	3
SOC	Social Science Elective	3	0	3
		12	0	12

Eight Quarter (Winter)

GEN	General Electives	8	0	8
HUM	Humanities Elective	3	0	3
		11	0	11

Ninth Quarter (Spring)

GEN	General Electives	9	0	9
		9	0	9
	Program Totals	89	20	96

*Course sequence and hours may vary depending on courses selected.

CURRICULUM REQUIREMENTS FOR THE Associate in Science (A.S.) Degree

Requirements (74 Quarter Hours)	**Quarter Hours**
Communications ENG 150, 151, 152	9
Computing	3
Humanities and Fine Arts ENG 204 and courses selected from Art, English, History, Music, and Philosophy	6
Mathematics For most math/science programs, courses selected should include the Calculus sequence. MAT 103 or MAT 151 is required.	20
Science* Courses selected must include two (2) three-quarter sequences (12 credit hours each) of laboratory science. Options include transfer courses in Biology, Chemistry, and Physics	24

Science course sequences may consist of:
Biology: BIO 101, 102, 103 or BIO 201 and any two of the following - BIO 202, 203, 204, 205
Chemistry: CHM 200, 201, 202 or CHM 210, 211, 212
Physics: Three of the following four courses
PHY 111, 112, 113, 114 or PHY 201, 202, 203
Note: The recommended sequences are underlined.

Social Science Courses selected from Anthropology, Geography, Political Science, Psychology, and Sociology	9
Physical Education	3
Required Electives (22 Quarter Hours) Preprofessional Cognate** or General Courses	22
Total Quarter Hours	96

*The two three-quarter sequences of laboratory science must be taken in two different disciplines.

**These preprofessional, cognate courses should be selected carefully and in coordination with the senior institution.

ASSOCIATE IN SCIENCE

Evening Program Model of Quarterly Course Sequence*

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
ENG	150	Grammar and Composition	3	0	3
MAT	150	Precalculus Mathematics	5	0	5
PED		Physical Education Elective	0	3	1
SOC		Social Science Elective	3	0	3
			11	3	12
Second Quarter (Winter)					
ENG	151	Composition and Introduction to Literature	3	0	3
MAT	151	Calculus and Analytic Geometry I	5	0	5
PED		Physical Education Elective	0	3	1
SOC		Social Science Elective	3	0	3
			11	3	12
Third Quarter (Spring)					
ENG	152	Composition, Research, and Documentation	3	0	3
MAT	152	Calculus II	5	0	5
PED		Physical Education Elective	0	3	1
SOC		Social Science Elective	3	0	3
			11	3	12
Fourth Quarter (Fall)					
MAT	202	Calculus III	5	0	5
SCI		First Science Sequence - Course I	3	3	4
			8	3	9
Fifth Quarter (Winter)					
GEN		General Elective	5	0	5
SCI		First Science Sequence - Course II	3	3	4
			8	3	9
Sixth Quarter (Spring)					
CAS	105	Introduction to Scientific Data Processing	2	2	3
ENG	204	Oral Communications	3	0	3
SCI		First Science Sequence - Course III	3	3	4
			8	5	10
Seventh Quarter (Fall)					
GEN		General Elective	3	0	3
HUM		Humanities Elective	3	0	3
SCI		Second Science Sequence - Course I	3	2	4
			9	2	10

Eighth Quarter (Winter)				
GEN	General Elective	3	0	3
HUM	Humanities Elective	3	0	3
SCI	Second Science Sequence - Course II	3	2	4
		9	2	10
Ninth Quarter (Spring)				
GEN	General Elective	4	0	4
GEN	General Elective	4	0	4
SCI	Second Science Sequence - Course III	3	2	4
		11	2	12
	Program Totals	86	26	96

* Course sequence and hours may vary depending on courses selected.

GENERAL TECHNOLOGY CURRICULUM CORE

General Technology Curriculum Core is designed as a career mobility program for technical students to acquire the general education and related courses in subject areas such as humanities, communications, social sciences, and theoretical and applied sciences such as biology, chemistry, physics, mathematics, general computer studies and general graphics (drafting) that are foundation courses to specific curriculums in the technical field. After completion of this certificate curriculum the student has job skills for occupations requiring communications skills and/or science and mathematics. The student may take this program as the first level in a specific technical curriculum as an intended objective component of that technical curriculum. Students may also take this program for transfer to a technical curriculum at another community college system institution either prior to or concurrently with enrollment at the institution at which they intend to pursue or are pursuing a technical curriculum degree.

Job Opportunities

Lab Assistance, research
Technicians Assistance
Employment Clerk
Customer Service Representative
Admissions evaluator (education)

GENERAL TECHNOLOGY CURRICULUM CORE

Certificate

			Hrs. Per Week			Credit
			Class	Lab	Skills	Hrs.
RELATED COURSES						
BIO	101	Human Anatomy and Physiology I	4	3	0	5
BIO	102	Human Anatomy and Physiology II	4	3	0	5
OR						
BIO	107	Anatomy and Physiology I	4	0	0	4
BIO	108	Anatomy and Physiology II	4	0	0	4
Related Electives*						(14)(16)
						24

*Related Electives chosen according to occupational goals from curriculum courses offered by the College to total at least 24 quarter hours of degree-level credit for this section of courses.

GENERAL EDUCATION

ENG	204	Oral Communications	3	0	0	3
PSY	101	Introduction to Psychology	3	0	0	3
SOC	201	Social Problems	3	0	0	3
General Education Electives**						9
						18

**A total of at least nine (9) quarter hours of degree-level credit of general education electives chosen according to occupational goals from English, social science, and/or humanities curriculum courses offered by the College.

ELECTIVES***

***In addition to the program requirements previously stated, a minimum of six (6) credit hours of electives must be selected from degree-level courses.

The total number of credit hours for this Certificate program is 48.

Course Descriptions

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PHO	Photography	247
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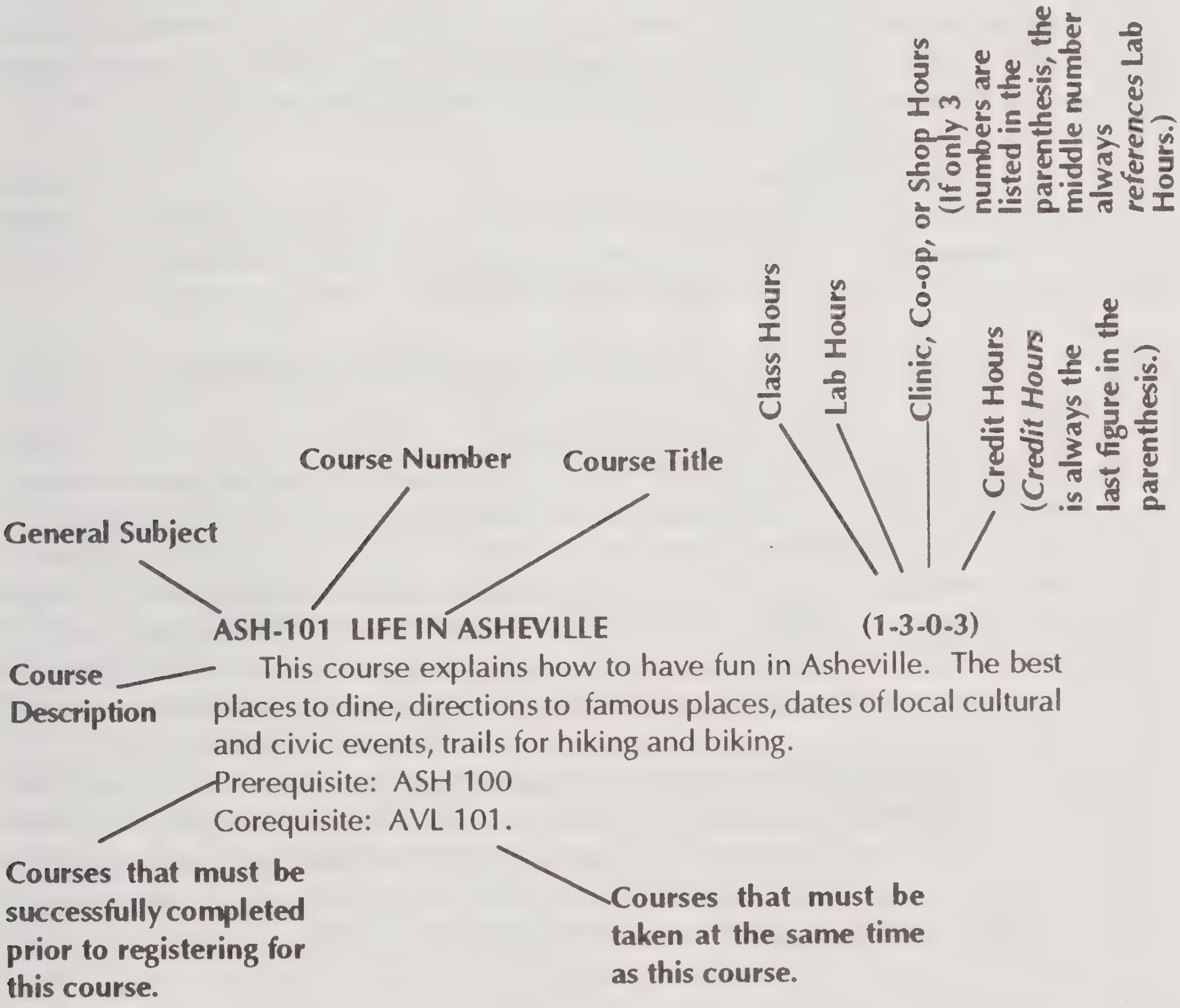
COURSE DESCRIPTIONS

The following section of your catalog contains descriptions of courses offered by Asheville-Buncombe Technical Community College. These descriptions contain information about the content of courses so that students will know what they will be learning.

The following examples explains each component of the course description entry.


Class Hours
Lab Hours
Clinic, Co-op, or Shop Hours (If only 3 numbers are listed in the parenthesis, the middle number always *references* Lab Hours.)
Credit Hours (*Credit Hours* is always the last figure in the parenthesis.)
Course Number
Course Title
General Subject
Course Description
Courses that must be successfully completed prior to registering for this course.
Courses that must be taken at the same time as this course.

ASH-101 LIFE IN ASHEVILLE (1-3-0-3)

This course explains how to have fun in Asheville. The best places to dine, directions to famous places, dates of local cultural and civic events, trails for hiking and biking.

Prerequisite: ASH 100

Corequisite: AVL 101.

Please examine each course description before registering and determine if all prerequisites have been met. Prerequisites shown are those courses that must be successfully completed before attempting further study. In certain cases the department chairperson may waive some prerequisites.

**Credit by Examination will not be available for courses marked with an asterisk because of the nature of the course and in some cases safety requirements in the use of equipment. Any exceptions must be with the approval of the department chairperson.*

Allied Health Education

AHE-213 Hazardous Materials and Disaster (2-2-0-3)

In this course students are exposed to a variety of problems and hazards encountered by emergency services personnel. Chemical poisons, both airborne and contact, are studied. Management of complex emergency situations and a study of disaster experience are included. Prerequisite: Departmental Approval.

AHE-215 EMS Personnel Management (4-0-0-4)

This course explores the problems of management in the EMS system. Basic principles of supervision and management organization are presented. The structure and function of municipal governments, EMS grantsmanship, regulatory agencies, systems management, legal and other topics relevant to the EMS manager are discussed. Problems of manpower and training are also included. Prerequisites: PSY 101, Departmental Approval.

AHE-216 Fundamentals of Public Safety (3-2-0-4)

This course introduces the students to the roles of the various public safety personnel. Interaction between EMS and other public safety agencies is stressed. Emphasis is given to the basic practices of fire services personnel. Prerequisite: Departmental Approval.

Air Conditioning, Heating, and Refrigeration

AHR-1121 Fundamentals of Refrigeration: Domestic (3-0-12-7)

Terminology, laws of refrigeration, absolute pressure, and absolute temperature, energy conversion units, specific heat, latent heat, and sensible heat; measurement of heat in quantity and intensity; ton of refrigeration, pressure temperature relationships, transfer of heat by conduction, convection, and radiation; elementary refrigeration, refrigeration cycle and domestic refrigeration circuits and controls. Tools, materials, and methods applicable to refrigeration; bending, and joining tubing. Safety practices will be stressed. Emphasis will be placed on domestic equipment because of its basic nature. Prerequisite: None.

AHR-1122 Fundamentals of Refrigeration: Commercial (3-0-12-7)

Commercial refrigeration installation and servicing of display cabinets, walk-in coolers and freezer units and mobile refrigeration systems are studied. Catalogs are used to calculate heat loads, sizing, and matching system components and to study circuits and controls, refrigerants, oils, and methods. The American Standard Safety Code for refrigeration is studied and its principles practiced. Prerequisite: AHR 1121.

AHR-1123 Principles of Air Conditioning (3-0-9-6)

Work includes the selection of various heating, cooling, and ventilating systems, investigation and control of factors affecting air cleaning, movements, temperature, and humidity. Use is made of the psychrometric chart and sling psychrometer in determining needs to produce optimum temperature and humidity control. Commercial air conditioning equipment is assembled and tested. Heating and cooling loads are estimated and duct pressures are studied. Circuit and controls, both electric and pneumatic, are applied to heating and cooling. Practical sizing and balancing of duct work is performed as needed. Prerequisite: None.

AHR-1124 Principles of Heating: Fuels and Burners (2-0-6-4)

Fuels and burners used in supplying heat for various types of heating systems...coal, oil, natural gas, manufactured gas, liquefied petroleum gas, and electricity. Experiments in equipment selection, installation, adjustments and servicing will be conducted. Warm air systems, heat emitter, electric heating, forced hot water and steam heating systems, including selection and sizing of equipment...registers, grills furnaces, boilers, radiators, baseboards, piping, and ducts. Heating layout and specifications for an existing structure or one in blueprint stage will be prepared. Corequisite: AHR 1123.

AHR-1126 All Year Comfort Systems and A.C. Servicing **(2-0-9-5)**

Emphasis is placed on the installation, maintenance, and servicing of equipment used in the cleaning, changing, humidification, dehumidification, temperature control, and distribution of air in conditioned spaces. Installation of various ducts and lines needed to connect various components is made. Shop work involves circuit and controls, testing, and adjusting of air conditioning and refrigeration equipment, and locating and correction of equipment failure. Prerequisite: None.

AHR-1127 Duct Construction and Maintenance **(2-0-6-4)**

Study of various duct materials including sheet steel, aluminum, fiber glass, and plastic. Safety, sheet metal hand tools, cutting and shaping machines, fasteners and fabrication practices, layout methods, and development of duct systems. The students will study and service various duct systems and perform repairs including ducts made of fiber glass. A study is made of duct fittings, dampers and regulators, diffusers, heater and air washers, fans, insulation and ventilating hoods. Prerequisite: DFT 1116. Corequisite: AHR 1126.

Anthropology

ANT-101 Introduction to Anthropology **(3-0-3)**

The study of the archeological, language, and social evidence of human biological and cultural development, including a comparative study of kinship, religion, politics, and subsistence patterns, using the methods and theories of anthropology. Prerequisite: None.

Administrative Office Technology

AOT-100 Computer Keyboarding **(1-2-2)**

A computer-based course to develop touch keyboarding skill in entering data at the computer workstation. Alpha, numeric, and symbol keys are taught stressing accuracy. The numeric keypad is used for data entry. Business correspondence is introduced which includes the formatting of simple letters and memorandums. Speed is given emphasis. Minimum competency speed requirement is 20 wam. A-B Tech credit only. Prerequisite: None.

AOT-101 Keyboarding for Office Occupations **(2-3-3)**

Designed and required for office education majors, a computer-based course which introduces keyboarding fundamentals (keyboard control and techniques) as well as the numeric keypad, correspondence, centering, and tabulation applications. Minimum competency speed requirement is 25 wam for three minutes. Prerequisite: None.

AOT-103 Document Formatting **(2-3-3)**

Production work continues on letters, memos, reports, and tables. Form typing is introduced. Minimum competency speed requirement is 36 wam for five minutes. Prerequisite: AOT 101 or equivalent.

AOT-105 Document Production **(2-3-3)**

Speed-building emphasis continues with increased attention to accuracy. Development of sustained production on correspondence, tables, and reports is stressed. Minimum competency speed requirement is 48 wam for five minutes. Prerequisite: AOT 103 or equivalent.

AOT-112 Speedwriting Shorthand **(2-3-3)**

This course introduces the students to theory and dictation practice using Speedwriting. Speedwriting is an alphabetic shorthand system that uses only familiar letters and punctuation marks. Shorthand skills aid in more effective communication for greater office productivity. Prerequisite: AOT 101 or keyboarding skill at 32 wam within 4 errors.

AOT-113 Speedwriting Dictation and Transcription **(2-3-3)**

This is a continuing study of Speedwriting that emphasizes output. The course is designed to review principles learned in AOT 112 and to introduce students to the development of skills needed to produce mailable documents. Prerequisite: AOT 112

AOT-114 Advanced Speedwriting for the Automated Office **(2-3-3)**

Increased skill building and accuracy of transcribed notes in mailable formats are the goals of the third quarter of Speedwriting. Letters and memorandums are included; however, the productive employment of shorthand notes for recording instructions and telephone messages, notetaking, and word processing input are included to prepare the student for productive use of Speedwriting in an automated office. Prerequisite: AOT 113.

AOT-115 Information Processing Concepts **(3-0-3)**

An introduction to computerized administrative support. Organization concepts, skills, and procedures; desktop organizers and personal information management software; traditional and electronic information resources; processing information; managing output and time; decision making; communication systems; the automated workstation environment; and the changing office are studied. Prerequisite: None.

AOT-117 Word Processing **(2-3-3)**

Teaches the student how to use WordPerfect for word processing tasks. Basic fundamentals of document preparation including formatting, editing, saving, and printing are introduced. Essential topics such as moving blocks, search and replace, spell check, use of the thesaurus, typing enhancements, and merging are also covered. Prerequisite: AOT 101 or typing skill of 25 wam within three errors for three minutes.

AOT-120 Personal and Professional Development **(3-0-3)**

Designed to help the student recognize the importance of the physical, intellectual, social, and emotional dimensions of personality. Emphasis is placed on grooming and methods of personal and professional improvement. Prerequisite: None.

AOT-125 Text Editing Skills **(3-0-3)**

A course designed with emphasis placed upon punctuation and grammar skill building and use of reference manuals to assist in editing text on a word processor. Prerequisites: ENG 101, AOT 101.

AOT-200 Microcomputer Operations **(1-3-2)**

This course is designed to provide hands-on training in the use of word processing and database software. In addition, basic commands of the operating system and their relationship to office application software programs will be presented. Prerequisite: AOT 100 or AOT 101.

AOT-201 Records Management **(3-0-3)**

A comprehensive study of records management systems including the records manager and staff; inventory; retention and legal considerations; active, inactive, and vital records; manual, automated, and computer-based systems; and image technology. ARMA indexing rules are used and minimum competency tests are given on alphabetic, subject, numeric, and geographic data. Prerequisite: None.

AOT-202 Software Management for Administrative Support **(1-2-2)**

This course is designed to present user-oriented fundamentals of files management in a microcomputer hard disk environment. Hard disk management will focus on two processes--organizing programs and data and protecting them. Utility software including DOS and other commercial applications will be explored. Prerequisite: AOT 200.

***AOT-208 Administrative Support Systems and Procedures I** **(3-2-4)**

Designed to acquaint the student with the responsibilities of administrative support encountered in the integrated office. These include the following: office systems and the flow of information, telecommunications technology, telephone techniques, time management, arranging meetings and conferences, planning travel, and setting career goals for advancement and professional growth. Prerequisites: AOT 201, AOT 117.

***AOT-209 Administrative Support Systems and Procedures II** **(3-2-4)**

This course places emphasis on human relations studies and on preparing for pre-employment testing through the use of a series of tests designed for business, government, and industry. Prerequisite: AOT 208

AOT-217 Advanced Word Processing **(2-3-3)**

Job performance competency is sought using the advanced word processing functions of WordPerfect. Print options and enhancements, graphics, text columns, outlining, footnoting, using macros and styles, using math features, and sort and select are presented. WordPerfect for Windows will be introduced. Prerequisite: AOT 117.

AOT-218 Desktop Publishing **(2-2-3)**

A study of and utilization of software for designing and producing professional-looking documents containing both text and graphics in a microcomputer environment. Prerequisite: AOT 117.

AOT-220 Office Skills Reinforcement **(2-3-3)**

This course is designed as an intensive skills reinforcement to build speed and accuracy in both shorthand and keyboarding. Speed requirements and terminal objectives may be individualized to meet the needs of each student. The student learns to use the dictionary effectively. The student increases his/her ability to communicate via the written word in generally accepted businesslike terms by composing replies to a variety of letters and memorandums. Prerequisites: AOT 105, AOT 114

AOT-230 Office Supervision **(3-0-3)**

Emphasis is on building good human relationships in management. The student will be involved in role playing, group consensus problem-solving sessions and case study analysis. Prerequisite: None.

AOT-250 Office Systems and Technology Management **(1-3-2)**

The management of office technology is emphasized. The student researches topics relating to current technological advances including the analysis and purchase of hardware and software used to manage information. Use of advanced features of electronic typewriters will be presented. Presentation software to produce effective visuals and Word for Windows will be introduced. Prerequisites: AOT 117, AOT 200

Art

ART-101 Introduction to Art (3-0-3)

A survey of art history and appreciation with emphasis on understanding the meaning and form which the visual arts have taken throughout history. Prerequisite: None.

ART-102 Basic Drawing (2-2-3)

A study of two-dimensional composition, with emphasis on structure and texture found in nature and man-made forms. Prerequisite: None.

ART-103 Basic Two-Dimensional Materials (2-2-3)

An introduction to materials and techniques of two-dimensional design, including pencil, charcoal, ink, watercolor, chalk, conte crayon, and various paints. Prerequisite: None.

Automotive Mechanics/ Automotive Service Technician

AUT-100 Preventive Maintenance and Safety Inspection (2-2-0-3)

Introduction to the automobile and the automobile workplace. Shop safety and equipment will be covered. Preventive maintenance as required by the manufacturers will help train the student as well as make them more confident in the workplace. North Carolina State Safety Inspections will be covered. Prerequisite: None.

AUT-101 Internal Combustion Engines I (2-4-0-4)

Basic principles of internal combustion engines are explored. Safety, use of measuring tools, hand tools, and principles of operation are covered. Engine repairs will emphasize the upper engine including: cylinder head replacement, valve train repairs, manifold replacement, compression testing, and cylinder leak testing. Prerequisite: None.

AUT-102 Internal Combustion Engines II (2-4-0-4)

A continuation of AUT 101, this course provides the practical application of engine repairs. Topics and repairs will include: pistons, rings, crankshafts, connecting rods and oil pumps. This course completes preparation for a complete engine overhaul. Prerequisite: AUT 101.

AUT-103 Electrical Systems I (2-4-0-4)

This course provides the concepts of basic electricity and fundamentals of engine-related electrical devices. Repair and service procedures of batteries, starting and charging systems and ignitions are covered. Troubleshooting procedures using basic and special tools and equipment will be stressed. Prerequisite: None.

AUT-104 Electrical Systems II (2-2-0-3)

This course provides use of various test instruments: analog meters, digital meters, oscilloscopes. Equipment usage will include engine electrical analyzers and will stress troubleshooting, starting, charging, and ignition systems of the engine. Prerequisite: AUT 103.

AUT-105 Basic Automotive Fuel Systems (2-4-0-4)

This course covers principles of automotive fuel systems. Emphasis is placed on fuel delivery systems, fuel pumps, and intake systems. Prerequisite: None.

AUT-152, 154, 156, 158 Cooperative Work Experience **(0-0-30-3)**

Full-time work experience with an automobile dealership during alternating quarters is required for students enrolled in the Automotive Service Technician program. Upon completion of their work experience, students should be able to produce and describe a master work log sheet containing the various types and number of job tasks completed in an automotive dealership; demonstrate the acquired skills to make the transition from the classroom and lab to a job in the automotive industry with minimum difficulty. The work experience will emphasize diagnosis and repair of engines; electrical/electronic systems; brakes, steering and suspension systems; computerized engine control; manual transaxle and automatic transmissions. Work experience will be coordinated according to student status in the program to emphasize work that is related to previously studied topics. Prerequisite: Full admission to the Automotive Service Technician program, satisfactory progress, and departmental approval.

AUT-201 Automotive Chassis and Suspension Systems I **(2-4-0-4)**

This course provides an understanding of principles and functions of the components of automotive chassis and suspension systems. Topics will include: Adjustment of wheel bearings, proper torquing of wheels and suspension parts, replacement of suspension components, and steering units. Prerequisite: None.

AUT-202 Automotive Chassis and Suspension Systems II **(2-2-0-3)**

This course covers the practical application of repairs of chassis and suspension systems. Emphasis is placed on diagnosis and repair of all steering components. Upon completion, students will be able to perform work on live vehicles using manufacturers' procedures. Alignment and wheel balance will be stressed. Prerequisite: AUT 201.

AUT-203 Automotive Power Trains I **(2-4-0-4)**

This course provides principles and functions of the automotive power train systems. Topics include clutches, manual transmissions, drive shaft assemblies, differentials, and transaxles. Prerequisite: None.

AUT-204 Automotive Power Trains II **(2-4-0-4)**

This course leads the student into automatic transmissions. It covers transmission principles, hydraulic principles, automatic overdrive, and automatic transaxles. Prerequisite: AUT 203.

AUT-205 Automotive Heating and Air Conditioning **(2-2-0-3)**

This course covers principles of heating and refrigeration. Topics include testing, service, and repair of compressors, Expansion valves, and other components of air conditioning systems. Prerequisite: None.

AUT-206 Brake Systems **(2-2-0-3)**

A study of various braking systems on automobiles and light trucks. Drum brakes and disc brakes including ABS will be explored to understand their operation and the methods of service and repair. Prerequisite: None.

AUT-207 Automotive Electronics **(3-2-0-4)**

This course covers basic electronically controlled systems on automobiles. Emphasis is placed on electrically and computer controlled systems. Prerequisite: ELN 150.

AUT-208 Automotive Electronic Controlled Systems **(3-2-0-4)**

This course covers electronically controlled systems on late model cars. Topics include computers and braking systems. Students study, diagnose, and service electronically controlled systems. Prerequisite: AUT 207.

AUT-209 Automotive Emission Control Systems **(2-2-0-3)**

This course emphasizes emission control systems on late model automobiles. It includes troubleshooting, testing, and servicing emission control systems. Prerequisite: None.

AUT-210 Automotive Fuel Injection **(3-2-0-4)**

This course covers automotive fuel injection systems. Throttle body injection, port fuel injection and sequential port fuel injection will be studied. The operation of each system will be studied as well as how to test, troubleshoot, and repair the fuel injection systems. Prerequisite: AUT 105.

AUT-211 Engine Performance and Drivability **(2-6-0-5)**

This course is designed to use all the skills the student has gained from previous engine, fuel, and electrical/electronics courses in developing a technician who understands the modern engine. Emphasis will be on diagnosing and repairing problems related to the operations of the engine within limits set by the manufacturer. Prerequisite: Completion of all AUT courses in the first seven quarters or departmental approval.

AUT-1101 Internal Combustion Engine **(6-0-6-8)**

Development of a thorough knowledge and ability in using, maintaining, and storing the various hand tools and measuring devices needed in engine repair work. Study of the construction and operation of components of internal combustion engines. Testing of engine performance; servicing and maintenance of engine block, crankshaft, pistons, valves, cams, and camshafts, fuel and exhaust systems; cooling systems; proper lubrication; and methods of testing, diagnosing, and repairing. Prerequisite: None.

AUT-1102 Engine Electrical and Fuel Systems **(6-0-6-8)**

A thorough study of the electrical and fuel systems of the automobile. Battery, cranking mechanism, charging systems (both internal and external regulators), ignitions systems (a thorough coverage of both the conventional and HEI systems), accessories and wiring, fuel pumps, carburetors, and fuel injection systems. Characteristics of fuels, types of fuel systems, special tools, and testing equipment for the fuel and electrical system including the pollution devices. Prerequisite: AUT 1101 or departmental approval.

AUT-1121 Braking Systems **(2-0-3-3)**

A complete study of various braking systems, including anti-lock braking systems employed on automobiles and light-weight trucks. Emphasis is placed on how they operate, proper adjustment, and repair. Prerequisite: PHY 1101 or departmental approval.

AUT-1122 Automotive Electronics and Control Systems **(4-2-0-5)**

This course covers the basic electronic and computer controlled systems on automobiles. Emphasis is on diagnosis and service of these systems. Prerequisite: AUT 1102 or Departmental Approval.

AUT-1123 Automotive Chassis and Suspension Systems **(3-0-6-5)**

Principles and functions of the components of automotive chassis. Practical job instruction in adjusting and repairing of suspension, and steering systems. Units to be studied will be McPherson struts, springs, steering systems (conventional and rack and pinion), steering linkage, shock absorbers, wheel alignment on rear wheel and front wheel drive vehicles, and vehicles requiring four-wheel alignment. Prerequisite: PHY 1101 or departmental approval.

AUT-1124 Automotive Power Train Systems **(4-0-6-6)**

Principles and functions of automotive power train systems; clutches, transmission gears, conventional and computer controlled automotive transmissions, torque converters, drive shaft assemblies, rear axles and differentials. Identification of troubles, servicing, and repair. Prerequisites: PHY 1101, AUT 1123.

AUT-1125 Automotive Servicing **(6-0-6-8)**

Emphasis is on the shop procedures necessary in determining the nature of trouble developed in the various component systems of the automobile. Troubleshooting of automotive systems, providing a full range of experiences in testing, adjusting, repairing and replacing. Prerequisites: AUT 1123, AUT 1121, AUT 1128.

AUT-1128 Automotive Air Conditioning **(2-2-0-3)**

General introduction to the principles of refrigeration; study of the assembly of the components and connections necessary in the mechanisms, the methods of operation, and control; proper handling of refrigerants in charging the system. Prerequisite: PHY 1101 or departmental approval.

Biology

BIO-090 Introduction to Biology **(5-0-5)**

This pre-college course is designed to strengthen the students knowledge in the biological sciences. Emphasis will be upon the structure and functions of the human body. Prerequisite: None

BIO-101 Human Anatomy and Physiology I **(4-3-5)**

A study of the structure and normal functions of the human body and its systems with emphasis upon the interrelated functions of various parts and systematic processes in the development of basic physiological principles. Prerequisites: None.

BIO-102 Human Anatomy and Physiology II **(4-3-5)**

A continuation of BIO 101. Prerequisite: BIO 101.

BIO-103 Microbiology **(4-3-5)**

This is a study of microorganisms, pathogenic and non-pathogenic, their relation to disease, community problems and implications for proper health techniques. Prerequisite: None.

BIO-107 Anatomy and Physiology I **(4-0-0-4)**

A study of the structure and functions of the human body with cellular and topographic emphasis relating to the field of Radiologic Technology. Prerequisite: None.

BIO-108 Anatomy and Physiology II **(4-0-0-4)**

A continuation of BIO 107. Prerequisite: BIO 107.

BIO-111 Basic Life Sciences **(5-0-0-5)**

A study of the normal structure and function of the human body. Elementary principles and concepts of chemistry and microbiology are included. Prerequisite: None.

BIO-201 Principles of Biology **(3-3-4)**

An introduction to the fundamental principles of biology, including cell structure, chemistry, function, development, adaptation, and reproduction. Prerequisite: None.

BIO-202 General Zoology **(3-3-4)**

Classification, relationships, structure, and function of major animal groups. Prerequisite: BIO 201.

BIO-203 General Botany **(3-3-4)**

Classification, structure and function, ecology of plants. Emphasis given to seed plants. Prerequisite: BIO 201.

BIO-204 Ecology of Man **(3-3-4)**

A study of the past and present relationships of man with his biological environment. Ecological concepts and effects of population growth, pollution, and conservation of natural resources. Prerequisite: BIO 102 or BIO 201.

BIO-205 Natural History of the Southern Appalachians **(3-3-4)**

This course offers the student an opportunity to study the natural flora and fauna of the Southern Appalachians. A series of lectures and laboratory field trips will enable the student to develop an appreciation of the ecological relationships of our region. This summer quarter course will include an extended outing to be arranged during the quarter. Prerequisite: None.

BIO 299 Special Topics in Biology **(1-2-3)**

This course will provide students an opportunity to intensively investigate topics in biology not covered in other curriculum courses. Special topics may include natural history, genetics, etc. Prerequisite: Departmental approval.

BIO-1109 Biomedical Sciences **(4-2-0-5)**

This course covers the basic fundamentals and principles of anatomy, physiology, and microbiology, which provide a foundation for certain dental science courses. Prerequisite: None.

Basic Law Enforcement Training

BLE-100 Basic Law Enforcement Training **(16-0-30-26)**

The Basic Law Enforcement Training course prepares individuals to take the Basic Training...Law Enforcement Officers certification examination mandated by the North Carolina Criminal Justice Education and Training Standards Commission and/or it prepares individuals to take the Justice Officers Basic Training certification examination mandated by the North Carolina Sheriffs' Education and Training Standards Commission. Successful completion of this curriculum certificate program requires that the student satisfy the minimum requirements for certification by the Criminal Justice Commission and the Sheriffs' Commission. The student satisfactorily completing this course should possess at least the minimum degree of general attributes, knowledge, and skills to function as an inexperienced law enforcement officer.

Blueprint Reading

BPR-111 Blueprint Reading **(1-2-2)**

A basic study in the reading and interpretation of mechanical blueprints. Included will be a study of lines, views, dimensioning, notes and basic sketching. Prerequisite: None.

BPR-1104 Blueprint Reading: Mechanical **(1-2-0-2)**

Interpretation and reading the blueprints. Information on the basic principles of the blueprint; lines, views, dimensioning procedures and notes. Prerequisite: None.

BPR-1105 Blueprint Reading: Mechanical **(1-2-0-2)**

Further practice of interpretation of blueprints as they are used in the industry; study of prints supplied by industry; making plans of operations; introduction to drafting room procedures; sketching as a means of passing on ideas, information and processes. Prerequisite: BPR 1104.

BPR-1106 Blueprint Reading: Mechanical **(1-2-0-2)**

Advanced blueprint reading and sketching as related to detail and assembly drawings used in machine shops. The interpretation of drawings of complex parts and mechanisms for features of fabrication, construction and assembly. Prerequisite: BPR 1105.

BPR-1107 Blueprint Reading: Construction Trades **(1-2-0-2)**

How to read pictorial and orthographic drawings. Reading elevations, floor plans, symbols, notes, scales, construction types, interior and exterior details as related to a set of working drawings for a residence. Prerequisite: None.

BPR-1108 Basic Mechanical Blueprint Reading **(1-2-0-2)**

This course is designed to give the student an understanding of Industrial Blueprints. Emphasis will be placed on the study of basic lines, views, dimensions, notes, symbols, and industrial practice as related to the reading and interpreting of drawings. Prerequisite: None.

BPR-1109 Blueprint Reading: Construction Trades **(1-2-0-2)**

Advanced reading of design variations, construction materials, practices, planning, general construction specifications and heavy construction. Prerequisite: BPR 1107.

BPR-1116 Blueprint Reading: Air Conditioning **(2-2-0-3)**

Reading of working prints, exploded drawings, wiring schematics, equipment layouts, shop sketches, building codes, heat systems, standards and symbols. Prerequisite: None.

BPR-1117 Blueprint Reading: Welding **(1-2-0-2)**

A thorough study of trade drawings in which welding procedures are indicated. Interpretation, use and application of welding symbols, abbreviations, and specifications. Prerequisite: BPR 1108.

***BPR-1208 Blueprint Reading: Tool and Die** **(1-4-0-3)**

A complete and thorough knowledge of tool and die prints will be required. Industrial prints will be used in this course. The difference between production drawings or operation sheets and tools drawing will be presented. Assembly drawings as the piece fits into place will be broken down into each detail print required. Prerequisite: DFT 1207.

Business Administration

BUS-100 Contemporary Business **(3-0-3)**

A study of business as the activating element in an enterprise system striving to achieve a combination of human, material, and capital resources to satisfy the needs and wants of people. An introduction to business from the professional (as opposed to the consumer) viewpoint. Prerequisite: None.

BUS-101 Introduction to Business **(3-0-3)**

A survey of the business world with particular attention devoted to the structure of the various types of business organizations, methods of financing, internal organization, and management. Prerequisite: None.

BUS-114 Business Law **(5-0-5)**

A survey course designed to acquaint the student with certain fundamentals and principles of business law, including general contracts, bailments, sales contracts, commercial paper, agency employer and employee relations with UCC applications. Prerequisite: None.

BUS-117 Clerical Accounting I **(5-2-6)**

Basic accounting theory and applications are presented through the sequential steps of the accounting cycle. The accounting data are collected from source documents, the causative business transactions are analyzed, and the financial information is recorded and summarized. Computer processing of accounting data is introduced. Prerequisite: None.

BUS-118 Clerical Accounting II **(5-2-6)**

The processing of information involving transactions of a similar nature is studied as accounting subsystems. The cash receipts and payments and sales and purchases subsystems are given extensive practical emphasis in direct-entry, double-entry, and computer data processing formats. Prerequisite: BUS 117 or BUS 120.

BUS-120 Accounting I **(3-2-4)**

Principles, techniques and tools of accounting, for understanding of the mechanics of accounting. Collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned. Prerequisite: None.

BUS-121 Accounting II **(3-2-4)**

Partnership and corporation accounting including a study of payrolls, federal and state taxes. Emphasis is placed on the recording, summarizing and interpreting data for management control rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems. Prerequisite: BUS 120.

BUS-122 Accounting III **(3-2-4)**

The student is given a thorough knowledge of concepts used in the preparation and interpretation of financial statements. Each item of the income statement and balance sheet is carefully analyzed prior to making a selection as to how these items will be utilized. Prerequisite: BUS 121.

BUS-123 Finance **(5-0-5)**

An introduction to managerial finance with emphasis on maximization of stockholder wealth. Financial analysis and planning sources and uses and capital budgeting are included. Prerequisites: BUS 121, MAT 112.

BUS-125 Introduction to Banking Fundamentals **(4-0-4)**

The study and application of bank fundamentals. Emphasizes current trends in philosophy and position of management. Prerequisite: None.

BUS-164 Real Estate Law **(3-0-3)**

This course is an advanced course and meets the North Carolina Real Estate Commission's requirements as one of the advanced courses necessary to qualify for the State Board Broker's Exam. Prerequisite: BUS 296.

BUS-165 Real Estate Brokerage Operations **(3-0-3)**

This is an advanced course and meets the North Carolina Real Estate Commission's requirements as one of the advanced courses to qualify for the State Broker's Exam. Topics covered include real estate brokerage, closing procedures, contracts, and trust account guidelines. Prerequisite: BUS 296.

BUS-170 Introduction to Real Estate Appraisal **(3-0-3)**

This course introduces the student to the subject of real estate appraisal and prepares the student for the course on *Valuation Principles and Procedures.* It begins with coverage of basic real property law, followed by coverage of the various concepts of value and the operation of real estate markets. Relevant mathematical concepts are then reviewed and the student is introduced to statistical concepts used in appraisal practice. Next comes coverage of real estate financing terminology and practices, followed by an introduction to the basics of residential construction and design. The student is then provided an overview of the entire valuation (appraisal) process, and the course concludes with specific coverage of residential neighborhood analysis and property analysis, two of the most important preliminary steps in the appraisal process. Prerequisite: None.

BUS-171 Valuation Principles and Procedures **(3-0-3)**

This course focuses on the procedures (methodology) used to develop an estimate of property value and how the various principles of value relate to the application of such procedures. Emphasis is on appraisal of residential 1 to 4 unit properties and small farms; however, all the concepts and procedures covered are applicable to the appraisal of all types of properties. The course begins with a review of the appraisal process and proceeds into thorough coverage of the sales comparison approach, followed by site valuation methods used to appraise residential 1 to 4 unit properties. The cost approach is then covered in depth. The basic concepts and methodology associated with the income approach are covered, with emphasis on direct capitalization using an overall rate and the gross rent multiplier technique. Finally, the student is introduced to the process of reconciling property value estimates obtained through application of the approaches to value. Prerequisite: BUS 170.

BUS-172 Applied Residential Property Valuation **(3-0-3)**

This course covers laws, rules and standards that must be followed by appraisers and focuses on the application of principles and procedures to the appraisal of residential 1 to 4 unit properties and small farms. The student is first acquainted with federal laws/regulations applicable to appraisers and the provisions of the North Carolina Real Estate Appraisers Act and related Commission Rules. Next comes coverage of the Uniform Standards of Professional Appraisal Practice (which are part of the Commission's Rules), followed by coverage of appraisal reports, with emphasis on standard report forms. The student then participates in a comprehensive case study of an appraisal of a single-family house using the URAR form. Instruction is then provided on various special considerations in appraising other types of residential 1 to 4 unit properties and in appraising farms. Finally, the student is introduced to appraising special (partial) property interests and to condemnation appraisals. Prerequisite: BUS 171.

BUS-200 Purchasing **(4-0-4)**

An introduction to the purchasing function focused on a manufacturing environment. Areas of concentration will include purchasing's relation and responsibility within the organization, department organization and ethics, vendor development and relations, and the legal aspects of procurement. The primary goal of procuring quality material and services at the best price when it is needed will be emphasized. Prerequisites: None.

BUS-206 Banking and Finance Credit **(3-2-4)**

The techniques of installment lending are presented. Emphasis is placed on establishing the credit, obtaining and checking information, servicing and loan, and collecting the amounts due. Other topics discussed are inventory financing, special loan programs, business development and advertising, and the public relations aspect of installment lending. Prerequisite: BUS 121.

BUS-207 Principles of Bank Operations **(5-0-5)**

The economic importance of banks; the receiving function, processing of cash items, bookkeeping operations, posting system, legal relationships with depositors, internal controls, trust services, growth of the American banking system, banking and public service. Prerequisite: BUS 120.

BUS-208 Financial Statements Analysis **(5-0-5)**

A study of analytical procedures utilized in evaluating solvency and profitability of business. Horizontal and vertical analysis of comparative statements are examined in the light of general economic conditions and conditions unique to the businesses being evaluated. Prerequisites: BUS 122, BUS 123.

BUS-209 Real Estate Finance **(3-0-3)**

This course is an advanced course and meets the North Carolina Real Estate Commission's requirements as one of the advanced courses necessary to qualify for the State Board Broker's Exam. Prerequisite: BUS 296.

BUS-222 Control Accounting **(3-2-4)**

An introductory study of accounting for departmental operations, cost systems, and budgetary controls. This course is for the non-accounting student. The student will gain an understanding of basic decentralized operations, absorption of costs, and the nature and objectives of standards and budgeting. Prerequisite: BUS 121 or BUS 140.

BUS-223 Intermediate Accounting I **(5-0-5)**

Study of the conceptual framework underlying financial accounting, financial statements, time value of money, and current assets. Prerequisite: BUS 122.

BUS-224 Intermediate Accounting II **(3-2-4)**

Study of financial accounting, including fixed and other assets, liabilities, stockholders' equity, dilutive securities, earnings per share, and cash flows. Prerequisite: BUS 223.

BUS-225 Cost Accounting I **(5-0-5)**

Nature and purpose of cost accounting, accounting for direct labor, materials, and factory overhead; for job order and process cost systems. Prerequisite: BUS 121.

BUS-226 Cost Accounting II **(3-2-4)**

A study of standard cost procedures; selling, administrative and distribution costs; budgeting and management use of cost data. Prerequisite: BUS 225.

BUS-229 Taxes I **(3-2-4)**

A study of federal and state personal income taxes, payroll taxes, sales and use taxes. Prerequisite: BUS 121 or HRM 106.

BUS-230 Taxes II **(3-2-4)**

A study of federal and state partnership and corporate income taxes. Prerequisite: BUS 229.

BUS-231 Government and Business **(3-0-3)**

A discussion of the extent to which government regulates business and the economy along with the implications and problems with which students, as citizens and voters, must be familiar. Covered are such regulations as Interstate Commerce Act, Sherman Act, Clayton Act, Pure Food and Drug Act, The Federal Fair Labor Standards Act, and the National Labor Relations Act. Prerequisite: ECO 105.

BUS-233 Personnel Management and Supervision **(3-0-3)**

This course presents the fundamental principles and successful practices in the organization and supervision of employees. A study of critically important and practical concepts of modern day supervision is presented. Results of modern social-psychological research and case studies are employed to demonstrate and emphasize leadership and motivation in the job situation. Prerequisite: None.

BUS-234 Introduction to Management **(3-2-4)**

The student is given a thorough introduction to basic theories of management and techniques of applying these in a real situation. Prerequisite: None.

BUS-235 Business Organization & Management **(3-2-4)**

Principles of business organization, administration and management covering management theory including planning, staffing, controlling, coordinating, directing, financing, and budgeting. An overview of developing and engineering the product, methods analysis and control, principles and administration of industrial relations and financing controls as interrelated functions of management are stressed. Prerequisite: BUS 101 or BUS 234.

BUS-236 Small Business Management **(3-0-3)**

A study of the principles of management as they relate to small businesses. The problems of small businesses will be stressed along with the possible solutions and how to alleviate the most common causes of business failures. Prerequisite: None.

BUS-237 Advertising **(5-0-5)**

A study of the importance and the role of advertising as it relates to the business sector. The techniques of advertising and display will be illustrated and demonstrated. Prerequisite: BUS 239.

BUS-238 Consumer Behavior **(5-0-5)**

An examination of motivational and behavioral approaches to understanding consumer behavior in buying goods and services and the business-management problems relating to buyer decisions. Prerequisite: BUS 239.

BUS-239 Introduction to Marketing **(3-2-4)**

A general survey of the field of marketing, with a detailed study of the function, policies, and institutions involved in the marketing process. Prerequisite: None.

BUS-240 Channels of Distribution **(5-0-5)**

A study of the characteristics, economic aspects, regulations, services, and problems relating to systems of physical distribution. Prerequisite: BUS 239.

BUS-241 Retailing **(3-0-3)**

A study of the role of retailing in the economy including development of and changes occurring in the retail structure, functions performed including merchandise controls and inventory records, principles governing effective operation and managerial problems resulting from current economic and social trends. Prerequisite: BUS 239.

BUS-242 Money and Banking **(5-0-5)**

An in-depth look at money and the world of banking that creates it and through which it flows. Examined are the tools of monetary and fiscal policy, the impact of monetary policy on the banking system, and monetary theory. Trends in banking as it moves into the twenty-first century and international banking are also addressed. Prerequisite: None.

BUS-243 International Marketing **(3-0-3)**

Focus is on the framework in which international marketing is conducted. Influence of international institutions, culture, stage of economic development, geographic, and demography are covered. Emphasis on multinational marketing problems and opportunities in our world. Prerequisite: BUS 239.

BUS-247 Insurance **(5-0-5)**

A presentation of the basic principles of risk insurance and their application. A survey of the various types of insurance is included. Prerequisite: BUS 114 or HMA 207.

BUS-248 Marketing Research **(3-2-4)**

A study of the role of Marketing Research in the American economy to include techniques for maximizing performance within marketing channels. Prerequisite: BUS 239.

BUS-249 Inventory Control **(3-0-3)**

A study of acquisition, control and distribution of inventories to include: ordering, control, and distribution techniques which may prove profitable in a marketing venture. Prerequisite: BUS 121.

BUS-251 Postal History and Organization **(3-0-3)**

Postal developments from ancient civilizations to the Reorganization Act of 1970 and today. Prerequisite: None.

BUS-252 Mail Processing I **(3-0-3)**

Fundamentals of processing mail, including classes and priorities of mail, casting and separation, layout of equipment, receipt of mail and service standards. Retailing postal products and services. Prerequisite: None.

BUS-253 Mail Processing II **(3-0-3)**

Principles of scheduling, manpower utilization, quality control, and advantages and problems of automation. Prerequisite: BUS 252.

BUS-254 Postal Customer Services **(3-0-3)**

Retailing postal products and services. Prerequisite: None

BUS-266 Professional Sales Techniques **(3-2-4)**

Focus is on the fundamentals and techniques of salesmanship. Emphasis will be placed on sales prospecting, sales strategies, sales presentations, closing techniques, and handling objections. Prerequisite: BUS 239.

BUS-269 Auditing **(5-0-5)**

Principles of conducting audits both internal and external, with special emphasis on the control and safeguarding of assets and properly recording liabilities. Prerequisite: BUS 223.

BUS-270 Introduction to Income Property Appraisal **(3-0-3)**

This course introduces concepts and techniques used to appraise real estate income properties. It begins with a discussion of underlying economic principles and motivations for investing in income property. The appraisal process is then reviewed with emphasis on income property. This is followed by a discussion of real estate market analysis, property analysis, and site valuation. Mathematical and statistical concepts used in the appraisal of income property are covered next followed by coverage of how to use financial tables and/or financial calculators to solve a variety of problems associated with analysis of real estate income properties, including present value, loan calculations, estimation of net operating income, and estimation of before tax cash flow. Next, students learn how to estimate the value of a real estate income property by using a gross income multiplier and by direct capitalization with an overall rate. Finally, students are introduced to other capitalization rates. Prerequisite: BUS 172.

BUS-271 Advanced Income Capitalization Procedures **(3-0-3)**

This course reviews and then expands on the concepts introduced in BUS 270. The direct capitalization techniques introduced previously are expanded to include various band of investment and residual techniques used in income property appraisal. This is followed by a thorough discussion of the concepts of yield rates and of discounted cash flow analysis (yield capitalization), which is the primary focus of this course. Financial leverage is also discussed so students better understand the relationship between various yield rates and capitalization rates. Several traditional yield capitalization formulas including Inwood, Hoskold, Ellwood and Akerson are then discussed. Although rendered obsolete by the advent of financial calculators, these formulas are still used by many appraisers; and students should be familiar with them. A financial calculator is required for this course. Prerequisite: BUS 270.

BUS-272 Applied Income Property Valuation **(3-0-3)**

This course covers laws, rules and standards that must be followed by appraisers and focuses on the application of principles and practices to the appraisal of income properties. The course begins with a review of federal laws/regulations applicable to appraisers, followed by coverage of the North Carolina Real Estate Appraisers Act and related Commission Rules, and coverage of the Uniform Standards of Professional Appraisal Practice (which are part of the Commissioner's Rules). Preparation of narrative appraisal reports is then covered, with students also being introduced to the Uniform Commercial and Industrial Appraisal Report (UCIAR) form. Coverage then shifts to appraising leased income properties, with emphasis on the effect of various lease provisions on the value estimate. The student then participates in highest and best use case studies, followed by case studies of appraisals of various types of existing income properties, which is the major focus of the course. The course concludes by covering considerations in appraising various development projects. Prerequisite: BUS 271.

BUS-296 Real Estate Fundamentals for Salespersons **(6-0-6)**

An introductory-level course in real estate practices and principles, basic real estate law, finance, construction, and the role of government in real estate. This course is designed to provide the student with the information necessary to qualify for the "North Carolina Real Estate Salesman's Exam." Prerequisite: None.

BUS-1103 Small Business Operations **(3-0-0-3)**

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business, and employer-employee relations. Prerequisite: None.

Carpentry and Cabinetmaking

CAR-1101 Carpentry I **(5-0-6-7)**

This course will be presented as an introduction to the first steps in the site analysis and site preparation. Foundation layout and estimates of needed materials will be taught. Overall planning of job will be presented for consideration. Size, identification, and proper use of nails will be studied. Corequisite: BPR 1107.

CAR-1102 Cabinetmaking I **(5-0-15-10)**

This course is designed to introduce the student to hand and power tools used in a cabinet shop. Various projects will be undertaken to develop the student's skills in the use of these tools. Identification and use of domestic woods will be stressed. Use of proper fasteners is studied. Corequisite: BPR 1107.

CAR-1103 Carpentry II **(6-0-15-11)**

In this course the student will study several types of roof construction. Each student will be required to layout, cut and assemble rafters and trusses. Students will study the rafter square in order to calculate the lengths and cuts of rafters and truss parts. Stair layout and construction will be considered in detail. Prerequisite: CAR 1101.

CAR-1104 Cabinetmaking II **(0-0-9-3)**

Cabinet layout and details are stressed. Installation of cabinets and built-ins is presented. Uses of plastic laminates will be taught. Prerequisite: CAR 1102.

CAR-1105 Advanced Carpentry Projects **(2-0-24-10)**

Live projects will acquaint the student with "hands-on" experience in framing and finish work. Quality workmanship will be emphasized. Each student will be given the opportunity to gain expertise in the use of carpentry tools. Prerequisites: CAR-1101, CAR-1103.

Computer Applications Software

CAS-101 Introduction to Computing Concepts **(2-2-3)**

A topically based introduction to computing. Students will learn how to use computers to become more productive in their educational and professional careers. Coverage will emphasize word processing and include an introduction to such applications as data analysis, hypertext, desktop publishing, graphical user interfaces, artificial intelligence, graphics, and telecommunications. Prerequisite: None.

CAS-104 Introduction to Business Data Processing **(2-2-3)**

Fundamental concepts and operational principles of business information systems are presented along with a variety of hardware and software applications. The goal of this survey course is computer literacy with a primary emphasis on Lotus 1-2-3 and computer concepts. Prerequisite: None.

CAS-105 Introduction to Scientific Data Processing **(2-2-3)**

This course is designed to meet the data processing requirements of students in the Division of Engineering and Applied Technology. A problem-solving approach emphasizes concepts, operating systems, spreadsheets, and graphics. Prerequisite: MAT 101.

CAS-118 Database Management Concepts **(3-2-4)**

An introduction to database concepts in a business information systems environment. Students design, develop, and maintain database applications in a distributed data processing configuration. Fourth and fifth-generation software methodologies and query languages are introduced. Prerequisite: CSC 107.

CAS-160 Computer Operations **(2-2-3)**

A production lab environment is provided for the study of computer operations. The student will receive practical experience in the utilization of job management and system maintenance. Other topics include: utilities, OCL, spooling, cataloging, interactive processing, interrupt handling, and related OS features. Both microcomputer and mainframe concepts will be emphasized. Prerequisite: CAS 104.

CAS-200 Introduction to Microcomputers **(2-2-3)**

This course is designed to provide the business computer programming student an introductory study of microcomputer hardware, software, operating systems, internal architecture, application packages, communications, and mainframe support. The course will also emphasize various configurations, peripheral equipment, interfaces, and microprocessor characteristics. Pre- or corequisite: CSC 107.

CAS-201 Advanced Microcomputer Applications **(2-2-3)**

An intensive study and utilization of computer graphics and graphical user interface environments. Topics of study will include presentation graphics, bit mapped formats, point-and-shoot techniques, windows, and image transfers. Prerequisite: CAS 200 or AOT 200.

CAS-203 Data Communications and Networking **(2-2-3)**

This course provides the student with a comprehensive introduction to data communications techniques and applications. The material covered includes a brief history of data communications, carriers, services, and regulations, circuit types, data codes, interfaces, protocols and open systems, and data communications network management. It concludes with data communications system transactions, and applications. Prerequisite: CAS 104.

CAS-220 Systems Analysis and Design **(2-3-3)**

In addition to learning theoretical concepts, students study an existing data processing system and make recommendations for improvement, or design a new system. The task includes analysis of the flow of data from its point of origin through all stages of data processing, using CASE tools. Prerequisite: CSC 115.

CAS-221 Advanced Projects **(1-3-2)**

This course is designed to provide the student with experience in applying programming techniques to advanced problem solving. Students will utilize skills and techniques acquired in previous data processing courses to implement an integrated programming application. Prerequisite: CSC 220. Corequisites: CSC 160 and ENG 103.

Chemistry

CHM-100 Introduction to Chemistry **(3-3-4)**

An introductory course in chemistry suitable as a preparatory course for CHM 101 and CHM 200. Basic concepts, terminology, and mathematical skills are emphasized. Prerequisite: None.

CHM-101 Fundamentals of Physiological Chemistry **(3-2-4)**

Emphasis is placed on physiological aspects of inorganic chemistry, organic chemistry, and biochemistry. Theoretic topics are dealt with briefly as an aid to understanding bodily processes. Prerequisite: CHM 100 or High School Chemistry.

CHM-102 Engineering Chemistry **(2-2-3)**

Chemical principles related to the Engineering Technology student will be emphasized. This includes the chemistry of elements and compounds and their relationship to the engineering field. Matter, energy, chemical reactions, water and air pollution are also included. Prerequisite: None.

CHM-150 World of Chemistry I **(3-2-4)**

A three course sequence designed to meet the science requirement for the Associate in Arts major. The sequence is a unified view of the science and practice of chemistry. It stresses a humanistic approach to the discipline and de-emphasizes mathematical problem solving. After an introduction, the course investigates dyes and color, measurement, the atom, the periodic table and chemical bonds. Prerequisite: None.

CHM-151 World of Chemistry II **(3-2-4)**

A continuation of CHM 150 investigating matter and spectroscopy, the mole concept, water chemistry, Kinetics, chemical reactions, the electron, and the proton. Prerequisite: CHM 150.

CHM-152 World of Chemistry III **(3-2-4)**

A continuation of CHM 151 that studies the atmosphere, chemistry of the earth, metals, surface chemistry, carbon chemistry, polymers, proteins, genetic code, and the environment. Prerequisite: CHM 151

CHM-200 Principles of Chemistry I **(3-3-4)**

Introduction to matter and energy, the scientific method, metric system of measurements, symbols, formulas and equations, stoichiometry, Periodic Law, chemical bonding, molecular structure and chemical reactions. Prerequisites: CHM 100 or equivalency test. Corequisite: MAT 101.

CHM-201 Principles of Chemistry II **(3-3-4)**

A continuation of CHM 200. Physical behavior of gases, Kinetic molecular theory, liquid and solid state, solutions, concentrations, colloids, acid-base concepts. Prerequisite: CHM 200.

CHM-202 Principles of Chemistry III **(3-3-4)**

A continuation of CHM 200 and 201. Chemical Kinetics and equilibrium, ionic equilibria of weak electrolytes. Solubility product principle, chemical thermodynamics, oxidation-reduction, introduction to nuclear and organic chemistry, qualitative analysis. Prerequisite: CHM 201.

CHM-210 Organic Chemistry I **(3-3-4)**

Organic nomenclature, structures and properties, energy of activation, reaction rates, free radical mechanism, substitution reactions, stereochemistry. Elimination reactions. Prerequisite: CHM 202.

CHM-211 Organic Chemistry II **(3-3-4)**

Electrophilic and free radical addition to alkanes, stereospecific reactions, conjugation and resonance, alkynes and alicyclic hydrocarbons, aromatic hydrocarbons and electrophilic substitutions. Prerequisite: CHM 210.

CHM-212 Organic Chemistry III **(3-3-4)**

Spectroscopy and structure, functional group studies of alcohols, ethers, expoxides, aldehydes, ketones, carboxylic acids, amines, and phenols. Introduction to molecular orbital theory and biomolecules. Prerequisite: CHM 211.

CHM-215 Principles of Biochemistry **(4-0-4)**

Introduction to structures and properties of amino acids, proteins, carbohydrates, lipids, and nucleic acids. Introduction to metabolism. Prerequisite: CHM 210.

CHM 220 Instrumental Analysis **(2-4-4)**

A laboratory course designed to study selected modern instrumental methods of analysis, their theory and practice. Instruments include UV-visible, atonomic absorption, and infrared spectroscopy; thin layer, column and gas chromatography; potentiometric and conductometric titrations. Prerequisite: CHM 202.

Civil Engineering Technology

CIV-114 Statics **(5-0-5)**

Forces, and types of force systems; moments and couples; equilibrium of force systems by analytical methods; and static friction. Prerequisites: MAT 102 and PHY 102.

CIV-202 Properties of Soils **(2-2-3)**

Study of soil types and their physical properties; mechanical analysis; classification of soils; hydrostatics of ground water. Methods of compaction and consolidation. Prerequisite: None.

CIV-216 Strength of Materials **(5-0-5)**

Fundamental stress and strain relationship; centroids and moments of inertia; torsion, shear and bending moments; stresses and deflection in beams; columns and combined stresses; analysis of connections. Prerequisite: CIV 114.

CIV-217 Introduction to Construction Technology **(2-0-6-4)**

Construction practices and terminology for the construction industry. Includes visits to construction, surveying, and engineering projects. Pre- or Corequisite: MAT 101.

CIV-218 Properties of Plain Portland Concrete **(2-2-3)**

Study and testing of the composition and properties of portland concrete including cementing agents, aggregates, admixtures, and air-entertainment; design and proportioning of concrete mixes to obtain pre-determined strengths and properties; methods of placing, consolidating and curing concrete; standard control tests of concrete. Prerequisite: None.

CIV-219 Steel and Timber Construction **(2-4-4)**

Analysis and basic design of steel beams, tension members, columns, and (riveted, high strength bolted and welded) connections; study of plate girders, industrial building roofs, continuous spans, lightweight steel construction; use of American Institute of Steel Construction Manual. Design of timber members and their connections. Prerequisite: CIV 216.

CIV-220 Project Planning **(2-2-3)**

Construction management, plant and job layout, project control and supervision, scheduling, time and motion studies, and particularly the use of critical path planning techniques and other similar techniques. Prerequisite: CIV 217.

CIV-221 Asphalt **(2-2-3)**

Study and testing of asphaltic materials, asphalt pavements, and surface treatments. Study will include properties, testing, production, laydown, and design of asphalt. Prerequisite: None.

CIV-223 Codes, Contracts, and Specifications **(2-2-3)**

Basic principles and methods in contract relationships; national, state, and local building codes; specifications for different orders of surveying work; deed descriptions. Prerequisites: SUR 101 and CIV 217.

CIV-224 Reinforced Portland Concrete **(2-2-3)**

Analysis and design of reinforced concrete structural members; principles of prestressed and precase concrete. Prerequisites: CIV 216, CIV 218.

CIV-225 Construction Estimating **(2-4-4)**

Interpretation of working drawings and specifications for construction projects involving timber, steel, masonry, and concrete structures. Both building and roadway structures are taken completely through the building procedure from preliminary survey to final bid and beyond. Prerequisites: CIV 202, CIV 218, CIV 221, CIV 228, DFT 104, and SUR 102.

CIV-228 Relations and Ethics **(1-3-2)**

Study of ethical codes and their application to business relations with employer, employees, clients, technicians, and others. Class discussions of situations involving relations and ethical responses. Prerequisite: Senior Status.

CIV-230 Hydraulics **(2-2-3)**

A basic study of closed conduit and open channel flow. Conservation of energy. Prerequisite: None.

CIV-231 Hydrology **(2-2-3)**

The principles of Hydrology and resulting drainage. Sedimentation control. Prerequisite: None.

CIV-232 Water and Waste Treatment **(2-2-3)**

Study of public water sources and methods of treatment for a potable system, methods of waste water treatment, and solid waste handling and treatment including incineration, landfilling, recycling, and field trips. Prerequisite: CHM 102.

Business Computer Programming

CSC-107 Operating Systems **(3-2-4)**

This course is designed to provide the business computer programming student with a working knowledge of computer system software including Windows and MS-DOS 5.0. System resource management will be covered. Proficiencies in operating system utilization will be required. Prerequisite: CAS 104.

CSC-115 Program Design and Development **(4-0-4)**

A fundamental course for the student of business computer programming. Topics include: flowcharting, data structures, structured programming techniques, modular design, case tools, and top-down methodologies. A variety of logic problems will be presented and discussed. Prerequisite: CAS 104.

CSC-208 Programming: BASIC **(2-2-3)**

The purpose of this course is to provide a survey of BASIC, emphasizing practical applications. Areas of study will include BASIC syntax and logic, program design, print formatting, file maintenance, screen maintenance, user functions, system calls, chains and swaps, comparative BASIC's and BASIC systems. Prerequisite: CAS 104.

CSC-215 Programming I: COBOL **(4-0-4)**

The Common Business Oriented Language is presented in detail. A variety of commercial applications are developed, implemented, and tested. Prerequisites: CSC 107, CSC 107, and BUS 121.

CSC-216 Programming II: COBOL **(1-3-2)**

An advanced course in COBOL systems and procedures. Topics of study include: table handling, calling- and sub-programs, file structures, access techniques, screen facilities, and operating system interfaces. Advanced programming methodologies are integrated into the lab assignments. Prerequisite: CSC 115. Corequisite: CSC 215.

CSC-218 Programming I: RPG II **(4-0-4)**

Report Program Generator (RPG) coding includes preparation of spacing charts, file description, file extension, input, calculation, and output specifications. Business application programs are written. Prerequisites: CSC 107, CSC 115, and BUS 121.

CSC-219 Programming II: RPG **(1-3-2)**

This advanced programming course provides the student with additional experience in RPG systems and procedures. Lab assignments and projects are typical of those used in business and industry and correspondingly advanced programming methodologies are emphasized. Prerequisite: CSC 115. Corequisite: CSC 218.

CSC 222 C Programming **(2-2-0-3)**

Upon completion of this course the student will be able to write in C language using structured logic and design. Topical coverage will include the C programming environment, arrays, user-defined functions, data types, operators, input, output, library functions, debugging, testing, and documentation. Prerequisite: CSC 115 or Departmental Approval.

Culinary Technology

CSP-101 Food Preparation I **(2-0-9-5)**

This course is designed to give the student a working knowledge of the culinary profession, including the classical stations, vocabulary, basic products and safety and usage of equipment. Emphasis is placed on knife skills and basic cooking methods with concurrent demonstrations and laboratory experiences utilizing these elements in salad and vegetable preparations. The student will also experience cafeteria and banquet service. Prerequisite: None.

CSP-102 HRM Food Preparation II **(3-0-6-5)**

The student will learn the principles of egg cookery including breakfast preparation. The student will prepare a variety of hot and cold hors d'oeuvres such as Quiche Lorraine, Coquille St. Jacque, Shrimp Remoulade, and Antipasto. The principles and techniques of innovative salad preparation and presentation will be covered. Ingredients, dressings, structure, assembly, and garnish will be emphasized. The student will be given the opportunity to develop skill in the prep of simple consommes as well as a variety of cream soups, chowders, bisques, and national/regional soups. Thickening agents will be evaluated for the thickening power, holding properties, ease of handling, appearance, and taste. Lectures and demonstrations will be followed by a lab. The student will receive training in fine dining table service techniques and will have an opportunity to practice these skills in 6 live a la carte productions. Prerequisites: CSP 100, CSP 107.

CSP-103 Food Preparation II **(2-2-9-6)**

This course provides an introduction to the basic concepts of stocks and soups and the appropriate thickening agents. The principles and techniques of egg cookery and hot and cold appetizers will also be stressed. Lectures and demonstrations will be followed by a laboratory experience. The student will also participate in an a la carte production service. Prerequisite: CSP 103, CSP 107.

CSP-104 HRM Food Preparation III **(3-0-6-5)**

Emphasis is on the preparation of entrees and their sauces. Exotic and delectable table d'hote menus will be prepared and combined with the main course. Portion control will be stressed. Beef, veal, lamb, and pork in their primal cut form will be used on occasion to demonstrate meat cutting methods. Preparation of seafood with compound butters and sauces will be included. A variety of poultry dishes will be presented. The selection and use of stocks and bases will be discussed. Production classes will involve the students in set-up, decorations, organization, and service of 6 international buffets. Prerequisite: CSP 102.

CSP-106 Food Preparation III **(3-2-9-7)**

The emphasis will be on the preparation of entrees. Theory and application via a practical laboratory experience of meat and seafood cookery with appropriate related sauces and compound butters are addressed; also practical procedures and techniques of the bake shop including correct preparations, handling and use of yeast dough, pate a choux, cakes, tarts and cakes are examined and practiced. The student will participate in a national/international buffet style production. Prerequisites: CSP 101, CSP 103, CSP 107.

CSP-107 Food Service Equipment **(1-2-0-2)**

This course is to familiarize the student in the operation and safe handling of every major piece of mechanical equipment in the kitchen of the college lab. An opportunity will be given to learn the inner workings of each piece of kitchen equipment, to break it down for cleaning, and to subsequently restructure into its functional entity. Functions, uses, operating techniques and safety devices of each piece of equipment will be stressed. Prerequisite: None..

CSP-109 International Cuisine **(2-2-0-3)**

Essentially a research course that will attempt to discover, isolate and trace to their sources the factor which distinctly identify and label the cuisines, culinary practices and techniques of specific countries and certain general geographical areas of the world.

This course will include but not be limited to investigation into and discussions of the history, geography, philosophy, arts, and social structure of the cultures in question, and to determine their effect upon gastronomic habits. The course will also look into the origins of famous preparations such as Chicken Marengo, Crepes Suzette, Ceasar Salad, Peach Melba, et al.

Only through investigations such as these can the student develop the background, knowledge, and sensitivity so vital to the creative role of the chef. Prerequisite: CSP 101.

***CSP-110 Supervised Work Experience** **(0-0-40-4)**

This course is planned to give the student an opportunity to work in the industry and gain practical experience. Prerequisite: Successful completion of major courses through 3rd quarter or departmental approval.

CSP-114 Gardemanger **(2-0-3-3)**

This course examines the basic information, procedures and techniques of cold food preparation as well as its impact and place in the food service industry. The proper preparation, handling, use and artistic display of forcemeats, aspics, mousses, terrines, pates, cold sauces, garnishes, ice carving, and tallow are enhanced in a practical laboratory. Prerequisite: First Year Curriculum.

CSP-201 Food Preparation IV **(3-0-9-6)**

This course is designed to give the student a working knowledge of advanced culinary preparations, concurrent with the dining room experience. Higher level culinary skills and methods will be emphasized in the preparation of appetizers, soups, entrees, salads, and desserts. The student will be further exposed in preparing and supervising a station for the production of cafeteria and banquet services. Prerequisite: First Year Curriculum, CSP 110.

CSP-203 Dining Room **(1-2-0-2)**

This course focuses on various forms of dining room service. American, French, Russian and buffet service techniques and procedures will be applied. Practical skill is developed through actual table service in the "Tar Heel Room" of the College. The student will be given an opportunity to perform, on a rotating basis, the role of maitre d'hotel, waiter/ waitress. This program will also cover, when applicable, gueridon service. French menu terminology, dining equipment utilization and merchandising of the dining room will be stressed. Prerequisite: First year curriculum.

CSP-210 Food Preparation V **(3-0-9-6)**

This course focuses on the preparation of an a la carte production. It also investigates the development of traditional American regional cuisine; cultural influences, trends, cooking methods and indigenous ingredients followed by a practical laboratory experience, implementing the foods of America. Prerequisite: First Year Curriculum, CSP 201.

CSP-211 Food Preparation VI **(2-0-12-6)**

This course is designed to provide an opportunity for the student to utilize concurrent and previously required knowledge and skills in all areas of food preparation and service required for the final exam. This course is to serve as the capstone for the Culinary Technology program. The student will also develop and practice techniques for producing high quality cakes and pastries. Participation in the preparation, presentation and supervising roles for national/ international buffet service. Prerequisite: All Previous Major Area Courses.

CSP-214 Wine Appreciation **(0-2-0-1)**

This course is designed to have the students practice advanced food preparation on the gueridon in conjunction with the service of wine. Geography, history, classification, and vintages of the wines will be taught and discussed. Tasting and selecting the appropriate wine for the gueridon preparation will be emphasized. Prerequisite: First year curriculum.

CSP-215 Classical Food Preparation **(2-0-3-3)**

This course is designed to enhance the student's culinary foundation by reinforcing an understanding of classical cuisine. Students will butcher seafood and primal meats cuts and menu items utilizing classical methods with these particular cuts. Prerequisite: First Year Curriculum, CSP 110, CSP 210.

Skills for College Success

CSS-090 College Success Skills **(2-0-0-2)**

This course is designed to increase student success in college by assisting in obtaining skills necessary to reach educational objectives. Topics include time planning, test taking, communications skills, study techniques, question-asking skills, use of the library, and personal issues that face many college students. Prerequisite: None.

Dental Assisting

DEN-1103 Dental Materials I **(2-4-0-4)**

A study of physical and chemical properties and origin of dental materials, including the manufacturing process of specific materials. Laboratory exercises are designed to develop skills in manipulation and in understanding the application of the materials to dental procedures. Emphasis is on gypsum products, impression materials, polymers, and amalgam alloys. Prerequisite: None.

DEN-1120 Clinical Science I **(3-6-0-6)**

A study of principles and techniques for pre-operative procedures; the recognition, maintenance and use of basic dental instruments and equipment; and the basic skills of four/six-handed dentistry. Initial development of a professional vocabulary and demonstration of professional behaviors is encouraged. Prerequisite: None.

DEN-1122 Dental Materials II **(2-3-0-3)**

A continuation of Dental Materials I, with emphasis on mastery of the manipulation of various materials, e.g. cavity varnishes and liners, dental cements, waxes, dressings, and casting gold alloys. Prerequisite: DEN 1103.

DEN-1123 Oral Health Education **(2-4-0-4)**

This course provides an introduction to information and techniques for prevention and control of dental caries and periodontal disease, emphasizing the dental assistant's role in oral health education. Opportunities are provided for students to implement nutritional counseling, fluoride application, plaque scoring, oral physiotherapy instruction and education groups in the community. Prerequisites: DEN 1120, DHY 101.

DEN-1125 Dental Affiliation I **(1-0-12-5)**

A clinical practice learning experience for competency development in performing dental assisting duties in dental offices and clinics. Clinical practice, primarily in general dentistry, will include chairside assisting techniques, and clinical support procedures. Prerequisite: All first and second quarter courses.

DEN -1126 Dental Sciences **(5-0-0-5)**

A study of embryology and histology, basic principles of general and oral pathology and the prescription and administration of drugs commonly used in dentistry. Prerequisites: BIO 1109, DHY 101.

DEN-1130 Clinical Science II **(3-3-3-5)**

A clinical science course to increase skill competency levels in operative dentistry. Major emphasis is given to principles and procedures of the dental specialities, including endodontics, periodontics, orthodontics, prosthodontics, pedodontics, oral surgery, and public health dentistry. Prerequisites: DEN 1104, DEN 1120, DEN 1121.

DEN-1131 Dental Office Management **(3-2-0-4)**

Principles and procedures related to dental office management. Fundamentals of accounting, filing insurance and financial management are applied to dental office procedures. Opportunity for competency development in preparing, processing, maintaining and storing records; communications; scheduling appointments; inventory control and patient management. Prerequisites: DEN 1120, DEN 1130.

DEN-1135 Dental Affiliation II **(1-0-18-7)**

A clinical practice learning experience to increase dental assisting skills to job-entry level competency. Clinical assignments in various dental specialty practices, as well as general dentistry practices, will provide opportunities for advanced skill development in chairside assisting techniques, clinical support and business office procedures. Prerequisite: All first, second, third quarter courses.

DEN-1141 Professional Development **(2-0-0-2)**

Designed to prepare the student for employment as a dental assistant. Ethical, legal and personal responsibilities; testing and certification requirements; career opportunities; resumes and interviewing techniques. Prerequisite: All first, second, third quarter courses.

Drafting and Design Engineering Technology

DFT-101 Drafting **(2-4-4)**

Introduction to field of drafting; lettering; use of instruments; geometric constructions; orthographic projection theory, sketching; reading and instrument drawing; basic pictorial drawings; introduction to dimensions and notes; and reproduction process. Prerequisite: None.

DFT-102 Drafting **(2-4-4)**

Auxiliary views; sections, and conventions; dimensioning and shop notes for detail drawings; introduction of working drawings; screw threads, fasteners, keys, and springs; and simple assembly drawings. Prerequisite: DFT 101.

***DFT-103 Drafting** **(2-4-4)**

The study of precision dimensioning; preparation of set of working drawings; assembly drawings, detail drawings, and part lists; surface quality (finish); and weldments and symbols. Prerequisites: DFT 102, MAT 101.

DFT-104 Civil Drafting **(2-4-4)**

Plats as required by law drawn in pencil and ink. Highway construction layouts and profiles, steel and wood structural drawings, topographical mapping and symbols. Prerequisites: DFT 110, SUR 101.

***DFT-106 Technical Graphics** **(2-4-4)**

A basic course with an introduction to industrial drafting standards and practices. Special emphasis on representation and analysis of experimental data incorporating various graphical devices. Topics include use of drafting instruments and equipment; freehand lettering; multiview drawing; rectilinear, semi-log, and full-log graphing for display and analysis; polar and trilinear graphs; flow and pictorial diagrams. Prerequisite: None.

DFT-110 Engineering Graphics **(2-4-4)**

An introductory course that is designed to develop a basic proficiency in the use of instruments, lettering, multiview projection, pictorial drawing, sections, auxiliaries, dimensioning, simple fasteners, and working drawings. Emphasis is placed on graphic representation as a universal technical language. Prerequisite: None.

***DFT-201 Design Drafting I** **(2-6-4)**

Structural steel layout and detailing; application of structural shapes; fluid distribution; selection of pipe, tubing and fittings, single line piping diagrams and two line piping drawings; electronic and electrical symbols; and single line, schematic, and wiring diagrams. Emphasis will be placed on use of catalog and manuals related to the above areas of study. Inking technique and use of special drafting media will be applied where appropriate. Prerequisite: DFT 103.

DFT-204 Descriptive Geometry **(1-6-3)**

Points, edges, lines, planes, curved lines, curved surfaces, irregular surfaces, intersections, developments, auxiliary projections, revolutions, vectors, and practical design applications. Prerequisite: DFT 102.

***DFT-205 Design Drafting II** **(2-6-4)**

Charts and graphs, plats as required by law; topographical mapping and symbols. Design layouts and working drawings on a CAD system of gears, gear train drives, belt and pulley drives, and chain and sprocket drives. Prerequisite: DFT 103.

***DFT-206 Design Drafting III** **(2-6-4)**

Assignment of mechanical design projects requiring use of research; application of engineering principles; calculations; and use of various manuals, catalogs, and periodicals. Preliminary design sketches, layout drawings, detail drawings, subassembly drawings and assembly drawings done on a CAD system. Specifications, patent drawings, and simplified drafting practices will be required. Prerequisites: DFT 205, DFT 211, and DFT 220.

***DFT-211 Mechanisms and Kinematic Design** **(2-6-4)**

Introduction and definitions of kinematic terms; vectors; motion concepts; kinematic drawing; kinematic displacement, centros, velocities and accelerations of mechanisms; motion curves; displacement diagrams and cam layout; and practical problems, gear trains, cams, belts and pulleys, and chains and sprockets all done on a CAD system. Prerequisites: DFT 205, DFT 220, and PHY 102.

***DFT-220 Computer Aided Drafting** **(1-6-3)**

Introduction to Computer Aided Drafting with related problems and exercises designed to give student an understanding of a computer graphics work station as a drafting tool. Student will interact a digitizer, CRT, printer and plotter to produce 2-D drawings and documentation. Prerequisites: DFT 102 or DFT 110 or Departmental approval.

***DFT-221 Advanced Computer Aided Drafting and Design** **(1-6-3)**

A continuation of DFT-220 Computer Aided Drafting. Student will continue to work with new commands and command structure. Problems and exercises will place emphasis on advanced 2D and introduction to 3D CAD. Prerequisite: DFT 220.

DFT-222 Computer Aided Manufacturing **(2-6-4)**

Introduction to Computer Aided Manufacturing with related problems and exercises in manual and computer assisted CNC programming. Students will interact with a PC based computer, a CNC mill, and a CNC lathe to produce drawings, programs, and actual production parts. Students will gain an understanding of the principles underlying numerical controlled tool concepts with the use of CAD and CAM software. Prerequisites: MAT 102, DFT 220.

***DFT-1126 Pattern Development and Layout** **(0-3-0-1)**

A study of methods used in layout of sheet steel. Special emphasis is placed on developing pipe and angle layouts by the use of patterns and templates. Prerequisite: BPR 1104.

***DFT-1127 Construction Trades Drafting I** **(2-2-0-3)**

Use of instruments; lettering; planning and preliminary sketches; dimensioning practice; and use of symbols and conventions will be utilized in the development of working drawings for a residence. Emphasis will be on preparation of floor plan and typical wall section. Prerequisite: BPR 1109.

***DFT-1128 Construction Drafting II** **(2-2-0-3)**

A continuation of DFT 1127 with emphasis placed on development of foundation plan, exterior elevations, sections and details found in set of working drawings for a residence. Prerequisite: DFT 1127.

DFT-1207 General Machine Drafting **(2-4-0-4)**

Use of instruments; lettering orthographic drawing, sections and primary auxiliary views; dimensioning; displacement, timing and motion diagrams; and cam layout. Prerequisite: BPR 1106.

***DFT-1209 Tool Design and Planning** **(2-4-0-4)**

This course will enable the student to plan the process of production and isolate the areas that must be tooled for production. Cost of tools, jig and fixtures, and gaging will be considered. Students will review available items from vendors and utilize standard bushing charts and other references. Typical tool design procedures will be employed and prints must reflect standard procedures. Prerequisite: DFT 1207.

Dental Hygiene

DHY-101 Head, Neck, and Oral Anatomy **(3-4-0-5)**

A study of the structures of the head, neck, and oral cavity. Emphasis will be placed on the anatomy and morphology of permanent and deciduous teeth and the anatomy of the head and neck areas as related to the practice of dental hygiene. Prerequisite: None

DHY-103 Dental Radiology **(3-3-0-4)**

A study of the scientific principles of radiology, including biological effects of radiation exposure and radiation safety. Laboratory experience will include exposing, processing, mounting, and interpretation of dental radiographs. Prerequisite: DHY 101.

DHY-106 Oral Embryology and Histology **(2-0-0-2)**

A study of the oral histological development of the face and oral cavity, structures and functions of primary tissues, and the development of teeth and supportive tissues. Prerequisites: BIO 101, DHY 101.

DHY-110 Pre-Clinical Dental Hygiene I **(3-6-0-6)**

A study of principles and techniques for preoperative procedures and clinical dental hygiene procedures as well as development of a professional vocabulary. Initial development of a career philosophy and personal values for clinical dental hygiene practice are encouraged. Prerequisite: None.

DHY-111 Pre-Clinical Dental Hygiene II **(3-6-0-6)**

Theories and techniques for prevention of dental disease, including etiology, detection, removal and prevention of dental deposits are studied and practiced. Patient assessment, education and evaluation emphasize the concept of total patient care in dental hygiene practice. Prerequisites: DHY 101, DHY 110.

DHY 112 Dental Office Emergencies **(2-2-0-3)**

The study of the more common medical/dental emergencies. Attention will be directed toward prevention, preparedness, assessment, primary response including CPR, and accessing the Emergency Medical System, as necessary. Prerequisites: DHY 101, DHY 111 or DEN 1120, BIO 101 and 102 or BIO 1109.

DHY-114 General and Oral Pathology **(3-0-0-3)**

The study of general and oral pathology and the nature of disease with emphasis on diseased conditions the dental hygienist may encounter in practice. Prerequisites: BIO 102, BIO 103, DHY 106.

DHY-116 Dental Hygiene Seminar I **(1-0-0-1)**

A continuation of DHY 111 designed to prepare the student for clinical experience through the application of theory and skills. Prerequisite: DHY 111.

DHY-117 Dental Hygiene Clinic I **(0-0-9-3)**

The student provides direct patient care services for patients from the community in the dental hygiene clinic at a beginning level. Prerequisite: DHY 111, DHY 103.

DHY-118 Dental Hygiene Seminar II **(3-2-0-4)**

In this course the student will be introduced to the remaining psychomotor skills necessary to perform total patient care including management of the special patient. Externships provide the student with enrichment experiences off campus. Prerequisites: DHY 116 and DHY 117.

DHY-119 Dental Hygiene Clinic II **(0-0-9-3)**

The student demonstrates increased levels of competency in the performance of traditional and supportive tasks in the dental hygiene clinic with patients from the community. Prerequisites: DHY 116, DHY 117, DHY 206..

DHY-203 Community Dental Health I **(3-2-0-4)**

A study of the principles and methods used in assessing, planning, implementing, and evaluating a dental health program. Prerequisites: PSY 101, SOC 201.

DHY-205 Periodontology **(3-0-0-3)**

A study of the biological and clinical factors as they relate to periodontal disease. Prerequisite: DHY 106, DHY 114, BIO 103.

DHY-206 Dental Materials **(3-4-0-5)**

A study of the source and physical properties of materials used in dentistry. Manipulation of various materials is practiced with emphasis on the role of the hygienist when delivering direct patient care. Prerequisite: DHY 101, CHM 101.

DHY-216 Dental Hygiene Seminar III **(2-0-0-2)**

A study of nutrition as it relates to the dental patient emphasizing the role of the dental hygienist concerning diet analysis, nutrition and foods contributing to dental health. Prerequisites: DHY 118, DHY 119, NUT 101.

DHY-217 Dental Hygiene Clinic III **(0-0-12-4)**

This course focuses on increased levels of competency for performance of all required clinical skills. Emphasis is given to care of patients with periodontal disease. Prerequisites: DHY 118, DHY 119.

DHY-218 Dental Hygiene Seminar IV **(2-2-0-3)**

This course encourages students to develop personal traits and skills which enhance their employability as a provider of oral care. Externships provide the student with enrichment experiences off campus. Prerequisites: DHY 216, DHY 217.

DHY-219 Dental Hygiene Clinic IV **(0-0-12-4)**

A continuation of DHY 217 with demonstration of increased levels of competency expected. Prerequisites: DHY 216, DHY 217.

DHY-221 Pharmacology **(3-0-0-3)**

A basic study of physical and chemical properties, dosages and therapeutic effects of drugs used in dentistry, and drugs which have clinical significance in management of routine and emergency dental patients. Prerequisites: DHY 112, DHY 114, BIO 102, CHM 101.

DHY-222 Community Dental Health II **(1-3-0-2)**

A continuation in the study of dental public health and emphasis on assessing, planning, implementing, and evaluating a dental health program. Prerequisite: DHY 203.

DHY-223 Dental Hygiene Seminar V **(3-2-0-4)**

A study of the codes of the ethics and laws which govern the practice of dentistry and dental hygiene and their application to continual professional development. Externships provide the student with enrichment experiences off campus. Prerequisites: DHY 218, DHY 219.

DHY-224 Dental Hygiene Clinic V **(0-0-12-4)**

The treatment of an increased number of patients during each clinic session without sacrificing quality of care is emphasized. The student is expected to demonstrate exit level competencies for performance of all clinical dental hygiene practice tasks. Prerequisites: DHY 218, DHY 219.

Early Childhood Associate

EDU-101 Early Childhood Education: Child Care Credential I **(3-0-3)**

This course provides an introduction to the field of child care. Areas of study include introduction to the child care profession, child growth and development, and getting to know the whole child. Students are prepared for entry level employment as a teacher in a child care setting. This course gives the first half of instruction necessary to qualify for the N.C. Child Care Credential. Prerequisite: None.

EDU-102 Early Childhood Education: Child Care Credential II **(3-0-3)**

This course completes the introduction to the field of child care begun in EDU 101. Areas of study include developmentally appropriate practices, positive guidance, and providing a safe and healthy environment. This course gives the final half of instruction necessary to qualify for the N.C. Child Care Credential. Prerequisite: EDU 101.

EDU- 103 Orientation to Early Childhood Education **(1-4-3)**

Students will develop skills in observing children, teachers, and early childhood environments. Content of this course emphasizes principles and practices employed in a variety of types of early childhood centers in addition to methods of observation. Scheduled field experiences enable students to become acquainted with the profession in a first-hand manner and prepare students for participation in early childhood classrooms. Prerequisite: None.

EDU-104 Creative Activities in Early Childhood **(4-2-5)**

The student will pursue a study of creative activities for children including art, music, movement, and dramatics. Teaching aids will be developed, and students will plan appropriate activities to incorporate into a development program for children. Prerequisite: None.

EDU-105 Early Childhood Education: Foundations **(5-0-5)**

The student pursues a study of the historical and social foundations of the professions, methods of teaching young children, and the factors involved in planning programs for children. This course prepares the student to develop a resource file and plan single experiences, interest centers, daily schedule, and unit plans. Prerequisite: None.

EDU-106 Health, Safety, & Nutrition in Early Childhood **(4-2-5)**

Students learn basic concepts in health, safety, and nutrition, and how these relate to young children. The course emphasizes prevention and identification of common childhood illnesses, diseases, and accidents. Effective care giver and child health/sanitation practices will be taught. Laboratory experiences enable students to plan menus and food experiences for young children. Prerequisite: None.

EDU-107 Communication & Behavior in Early Childhood **(4-0-4)**

The student pursues a study of effective methods of communicating with children and helping them establish effective communication patterns with peers and adults. Content of this course emphasizes discipline and appropriate teacher responses to various problem behaviors of young children and communication styles that will contribute to a child's positive self-esteem. Prerequisite: None.

EDU-108 Child, Family, & Community Services **(1-4-3)**

Students will survey various agencies which serve children and their families. This course prepares the students to identify community resources and family needs and to facilitate parental awareness and use of community services. Prerequisite: None.

EDU-109 Instructional Materials & Equipment **(3-0-3)**

This course prepares the student to make effective teaching materials to be used in the classroom and to operate selected pieces of equipment. Prerequisite: None.

EDU-110 Exploration Activities in Early Childhood **(6-0-6)**

Students learn about basic science, math, and social studies concepts, facts, phenomena, and skills which young children think about, discover, and develop. This course prepares students to plan and implement developmentally appropriate science, math, and social studies experiences for young children aged 1-8. Prerequisite: None.

EDU-111 Working With Parents & Families **(4-0-4)**

This course will examine the status of the modern American family, roles undertaken by parents, and various methods of involving parents in a child's center/school setting. Students will develop skills in effective home/school communication, evaluate the purposes and value of home visitation programs, and discuss techniques of working with parents and families which contribute to optimum home-school linkage. Prerequisite: None.

EDU-115 Child Development I **(3-2-4)**

The content of this course prepares the student to discuss developmental sequences of children from conception to age two. Students should be able to identify milestones in physical, social, emotional, cognitive, and language development and plan appropriate experiences to stimulate further development. Students should demonstrate skills in routine caregiving activities such as holding, feeding, and diapering infants and toddlers. Prerequisite: None.

EDU-116 Child Development II **(3-0-3)**

Students will examine the developmental sequences of preschool-age children (3-5 years) with emphasis being given to factors influencing development. Scheduled visits to the campus child care center enable students to observe and practice skills needed to work with preschool children. Students will conduct an in-depth case study on one child. Prerequisite: EDU 115, or approval by Department.

EDU-117 Child Development III **(3-0-3)**

Content of this course emphasizes the school-age child's development in the areas of social, emotional, physical, and mental growth. The student is prepared to implement various strategies and activities to stimulate development in school-age children in both elementary school and day care settings. Prerequisite: EDU 116, or approval by Department.

EDU-121 Seminar Practicum - Preschool **(1-10-2)**

Students practice observation skills and begin to lead teaching experiences for small groups of preschool children in a laboratory setting. Major skills developed should include planning, conducting, and evaluating basic activities for small groups of children and managing the children's behavior. Prerequisites: EDU 103, EDU 104; Corequisites: EDU 105, EDU 116.

EDU-122 Seminar Practicum -Child Care **(1-10-2)**

Students will demonstrate caregiving skills by facilitating classroom routines and transitions, managing classroom behavior, and meeting children's individual needs. They will also plan, conduct and evaluate educational experiences in the day care laboratory setting. Prerequisites: EDU 115 or approval by Department.

EDU-201 Early Childhood Skill Development: Communications **(5-0-5)**

The student pursues a study of the importance of literacy, early literacy development, appropriate early experiences with books and writing, how to teach beginning reading and writing, major approaches used in teaching reading, and basic word recognition and comprehension skills needed for successful reading. Use of learning materials and appropriate reading/writing experiences is emphasized. Prerequisite: None.

EDU-202 Children With Special Needs **(5-0-5)**

This course is designed to introduce students to the field of special education and to train them to identify special needs in children, to refer children to professional resource people, and to care for and teach children with special needs in a regular or special classroom setting. Students will learn causes, characteristics and appropriate intervention and interaction strategies, for each disability/exceptionality. This course will correlate with laboratory experiences in EDU 222, Seminar Practicum - Special Needs. Prerequisites: EDU 115, EDU 116, and EDU 117 or approval by Department.

EDU-203 Early Childhood Curriculum Planning **(4-0-4)**

This course will focus on major elements of curriculum planning in early childhood education such as assessment of children, long-range instructional planning, various types of schedules, and use of commercial curriculum materials. Students will design indoor floor plans and playgrounds, list appropriate equipment, materials and supplies needed, and discuss how to set up and monitor safe indoor and outdoor early childhood environments. Prerequisite: EDU 105 or approval by Department.

EDU-204 Program Administration **(3-0-3)**

Students will recognize administrative concerns common to most early childhood programs. These concerns include establishing goals, policies, and philosophy; budgeting and funding; and relationships with service and regulatory agencies. State licensing guidelines will also be emphasized. Students will select a program type and relate projections/ assignments to it. Prerequisites: EDU 105, EDU 106, or approval by the Department.

EDU-221 Seminar Practicum - Primary School **(1-10-2)**

Students practice skills needed by assistants working in primary school settings by assisting small groups of children in learning activities in curriculum areas such as reading and math, preparing materials for instructional use, completing recordkeeping responsibilities and assisting in classroom and behavior management duties. Prerequisites: EDU 117, EDU 121 or EDU 122, or approval by Department.

EDU- 222 Seminar Practicum - Special Needs **(1-10-2)**

Students will observe, plan appropriate experiences for, and interact with children with special needs. Requirements include a case study on an individual child with special needs. Prerequisites: EDU 121, EDU 122, EDU 202, or approval by Department.

EDU-225 Early Childhood Internship **(2-20-4)**

This course prepares the students to seek employment in an early childhood center. During class, students will discuss topics relating to the internship laboratory experience. In the laboratory setting, the student demonstrates the competencies needed by an Early Childhood Associate and identified for the program. Prerequisite: Successful completion of the first six quarters.

Economics

ECO-102 Economics **(3-0-3)**

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large. Prerequisite: None.

ECO-105 Introduction to Economics **(5-0-5)**

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of laws of supply and demand and the principles bearing upon production, exchange, distribution, consumption, composition and pricing of national output, distribution of income, international trade and finance, and current economic problems. Prerequisite: None.

ECO-107 Consumer Economics **(3-0-3)**

Designed to help the student use his resources of time, energy, and money to get the most out of life. It gives the student an opportunity to build useful skills in buying, managing his finances, increasing his resources, and to understand better the economy in which he lives. Prerequisite: None.

ECO-108 Consumer Economics **(5-0-5)**

An in-depth study of consumer economics integrating the basics of consumer economics with the functional application of economics principles. Prerequisite: None.

ECO-1107 Consumer Economics **(3-0-0-3)**

The goal of this course is to meet the consumer needs of Vocational Education students by preparing them, according to their abilities and interests, to manage limited resources under changing economic conditions. Budgeting and the use of credit constitute major areas of concern. Prerequisite: None.

Engineering

EGR-105 Calculator Operation **(0-2-1)**

Engineering and surveying problem solving with scientific calculator. Prerequisite: None.

Electricity

ELC-1117 Basic Electricity **(3-2-0-4)**

A study of the electrical structure of matter and electron theory, the relationship between voltage, current, and resistance in series, parallel, and combination circuits. An analysis of direct current circuits by Ohm's Law and Kirchoff's Law. A study of the sources of direct current voltage potentials. Fundamental concepts of alternating current flow, reactance, impedance, phase angle, power, and resonance. Analysis of alternating current circuits. Prerequisite: None.

ELC-1118 Applied Electricity **(3-2-0-4)**

Provides fundamental concepts in single and polyphase, alternating current circuits, voltages, currents, power measurements, transformers, and motors. Instruction in the use of electrical test instruments in circuit analysis. The basic concepts of AC and DC machines and simple system controls. An introduction to the type of control used in small appliances, such as thermostats, timers, or sequencing switches. Applicable sections of the current National Electrical Code will also be presented. Prerequisite: ELC 1117.

ELC-1119 Electricity for Welders **(3-2-0-4)**

A study of the relationship between voltage, current, and resistance in series and parallel circuits. Analysis of A.C. and D.C. current motors and generators. A study of transformers, rheostats and controls, basic study of grounding, bonding and calculation of conductors. Prerequisite: None.

ELC-1201 Electricity-Industrial **(2-2-0-3)**

A study of the relationship between voltage, current and resistance in series, parallel and combination circuits. Fundamental concepts of alternating current flow; a study of reactance, impedance, phase angle, power and resonance and alternating current circuit analysis. Prerequisite: None.

Electronics Engineering Technology

ELN-101 Fundamentals of D-C **(4-4-6)**

Principles of direct current electricity including basic electron physics; electrical units of measure; Ohm's law, series, parallel, and series-parallel resistive networks; Kirchoff's laws; basic measuring instruments; power transfer, Thevinin and superposition theorems. Laboratory experiments provide proof of the important concepts developed. Prerequisite: Math 100 or permission of Department Chairperson.

ELN-102 Fundamentals of A-C **(4-4-6)**

Principles of alternating current electricity including: sine wave analysis, resistive, capacitive, and inductive networks; phasor relations in complex circuits; non-resonant and resonant series and parallel L-C-R circuits; inductive coupling; air and iron core transformer analysis. Important theoretical concepts are substantiated by laboratory experiments. Prerequisite: ELN 101, MAT 101 or permission of Department Chairperson.

ELN-104 Semiconductor Devices **(4-4-6)**

An introduction to semiconductor theory, followed by D.C. analysis of the PN junction, semiconductor diodes (conventional and Zener) and bipolar transistors. Graphical analysis of characteristic curves, load lines, and transistor biasing is studied in conjunction with thermal effects and power dissipation. Prerequisite: ELN 102.

ELN-105 Industrial Electronics **(1-0-3-2)**

This course introduces an overview of industrial electronics from simple switching, solid state devices, simple circuits including ladder logic, programmable controllers and through other microprocessor controlled equipment. Included will be sensory devices and detectors applicable to fields such as industry, automotive, heating and air conditioning. Emphasis will be placed on troubleshooting these devices and systems. Prerequisite: None.

ELN-110 Technical Documentation **(1-2-2)**

A course in documentating maintenance procedures and outlining troubleshooting steps. The use of technical manuals and documenting revisions will be an objective. The procurement of parts and using cross references for replacements will be covered. Prerequisite: None.

ELN -111 Fabrication Techniques **(1-4-0-3)**

A course which includes High Reliability Interconnection Technology for soldering techniques. The student will also design printed circuit boards for a special project, printed circuit board etching, drilling and fabricating the circuit to complete the project. High Reliability Re-work Technology will be taught with single and multi-layer printed circuit boards. Land and trace repair with installation and plating of edge connectors will be featured. Prerequisite: None.

ELN-150 Control Devices **(3-2-0-4)**

This course is a study of solid state electronic devices with emphasis on digital applications of these devices in automotive electronic circuity. Topics include diodes, triodes, transistors, transistor amplifiers and switches, logic circuity and Hall-effect switches. Applications include troubleshooting and analyzing electronic problems in automotive circuity. Prerequisite: None.

ELN-201 Linear Integrated Circuits **(4-4-6)**

A study of linear integrated circuits and their use in both linear and nonlinear applications. A review of basic operational amplifiers is followed by a more in-depth look at applications such as voltage regulators, waveform generation, analog to digital conversion and transducers. Prerequisite: ELN 104.

ELN-202 Communications Systems **(4-4-6)**

A study of the concepts of generation and amplification of carrier signals, various modes of modulation (AM, FM, SSB, Pulse, and Multiplex), transmission lines, antennas and hard wired systems. Various types of receivers, including AM, FM, and Single Sideband are studied, and emphasis is placed on such specialized receiver circuits as RF and IF amplifiers, mixers, and detectors. The student uses schematic diagrams and lab experiments to learn proper methods of testing, adjusting, and troubleshooting. An overview of such communication systems as Broadcast, Mobile, Marine, Radar, Navigation, Cable, Microwave, Cellular Telephones, and Satellites is included. Prerequisites: ELN 110, ELN 201, ENG 103, MAT 102, PHY 114.

ELN-203 Digital Fundamentals **(4-4-6)**

This course introduces the student to the concepts of digital logic and digital number systems. This includes basic logic functions, Truthtables, Boolean algebra, and combinatorial logic circuits analysis. The basic characteristics of the various logic families are covered. Prerequisite: None.

ELN-204 Digital Applications **(4-4-6)**

A continuation of the study of logic families and their interfacing. Other digital devices are introduced and their applications discussed. This includes latches, counters, registers, decoders, and memory devices. Complete digital systems are studied including system controllers and data transmission. Prerequisite: ELN 203.

ELN-210 Analytic Troubleshooting **(1-2-2)**

Analytic Troubleshooting gives the electronics technician a method of using his or her present knowledge more effectively in solving a problem. This process aids in finding the cause of the problem quickly, correcting the cause of the problem and not just the effect, fixing the problem so it stays fixed, in not creating new problems in the process of solving the old ones, and in encouraging the technician to think beyond the fix of the problem. Prerequisite: None.

ELN-223 Microprocessor Principles **(4-4-6)**

Introduces the student to microprocessor hardware and software using the M6800. Software includes basic programming concepts addressing modes and instruction set while the hardware discussion covers the microprocessor components such as ROM, RAM, MPU, PIA, and ACIA. Prerequisite: ELN 204.

ELN-224 Microprocessor Interfacing **(4-4-6)**

Application of concepts covered in ELN 223. Interfacing microprocessor to devices external to microprocessor. Includes standard techniques for controlling power circuits, motor drives and interface circuit to standard transducer. Also includes personal computer interface to analog devices. Prerequisite: ELN 223

ELN-225 Industrial Controls **(4-4-6)**

A presentation of topics relating to the control of industrial processes. Signal conditioning, transducers, and control loop characteristics are covered. Practical lab work includes hands-on experience with commercial programmable logic controllers and data acquisition. Relay ladder logic and programmable controller ladder logic are stressed. Prerequisite: None.

ELN-1120 Direct and Alternating Current **(2-6-0-5)**

This course includes a study of a structure of matter and the electron theory; the relationship between voltage, current, and resistance in series, parallel, and series-parallel circuits; analysis of direct current circuits by Ohm's Law and Kirchhoff's Law; sources of direct current potentials. Prerequisite: None.

ELN-1121 Direct and Alternating Current **(2-10-0-7)**

This course is a continuation of ELN 1120 including the fundamental concepts of alternating current flow; a study of reactance, impedance, phase angle, power, resonance; and alternating current circuit analysis. Prerequisite: ELN 1120.

ELN-1122 Solid State Devices **(4-4-0-6)**

This is a course in solid state theory and the servicing of AM and FM radio and stereo receivers. Devices studied include the diode, transistor, FET, Zener diode, and the VCO as circuit components. The circuits studied are multiplexing decoders, and power supplies. An introduction to troubleshooting of AM, FM Stereo receivers is included. Prerequisite: ELN 1121.

ELN-1123 Digital Circuits **(4-6-0-7)**

This course is a study of Binary notation based on the binary numbering system. The conversion of analog to digital, analysis of logic gates, solid state display of AND gates, OR gates, NAND gates, NOR gates, and exclusive OR and NOR gates. The course will also include the study of digital circuits used in home entertainment devices including logic display systems, counters, registers, and memories. Operational Amplifiers and microprocessors. Prerequisites: ELN 1122 or permission of Department Chairperson.

ELN-1124 **(5-10-0-10)**

This course will include servicing, alignment, and installation of AM and FM Stereo receiving equipment for the home and automobile. Recording by analog, digital, and laser techniques will be covered. The theories and trouble-shooting of the compact disc will be studied in detail. Prerequisite: ELN 1123.

ELN-1125 Video Servicing **(5-10-0-10)**

This course includes the theory of operation of black and white and color television receivers. A detailed study will be included of all circuits of the TV receiver in the classroom with laboratory sessions and supervised servicing practice to develop skills in using modern test equipment for repairs. This course will also include schematic reading with a practical approach related to troubleshooting and repairing the VCR. TV antenna systems with amplified signals will be analyzed. Prerequisite: ELN 1124.

Emergency Medical Science

EMS-100 Introduction to Emergency Medical Services **(2-2-0-3)**

An introduction to the pre-hospital care of the critically ill or injured that will prepare students to act as first responders. Students will complete certification requirements for cardiopulmonary resuscitation. Prerequisite: Departmental Approval.

EMS-101 Fundamentals of EMS **(8-6-0-10)**

This course is designed to introduce the student to the health care system and the function of emergency medical service providers within that system. A team approach is emphasized, and initial assessment and management of illness and injury is introduced. Fundamental, cognitive and manipulative skills common to the basic emergency care and assessment of both ill and injured patients will be practiced in the laboratory and clinical portions of this course. Theoretical principles underlying the use of equipment commonly found on ambulances, and initial treatment and evaluation of various emergency problems are emphasized. Upon successful completion of this course the student will be eligible to test for certification as an Emergency Medical Technician through the North Carolina Office of Emergency Medical Services. Prerequisite: Departmental Approval.

EMS-103 Principles of Extrication and Rescue **(4-3-0-5)**

This course is designed to acquaint the student with techniques of extrication and rescue by presenting a comprehensive approach to the problems of gaining access, disentanglement, and packaging and removal of persons entrapped in wrecked vehicles. Skills will also include water rescue, rescue from heights, rescue from depths, and rescue from burning buildings. A wide range of problems which occur during any rescue operation and for which the professional rescuer must be prepared is included. Prerequisite: Departmental Approval.

EMS-104 Injury Management I **(5-3-0-6)**

This course emphasizes physical assessment of patients with specific medical and trauma related problems. In addition, principles of fluid and electrolyte balance are discussed as they apply to the treatment of shock and other disorders. Prerequisites: EMS 101, current N.C. EMT certification. Corequisites: BIO 102 and EMS 105 **OR** Departmental Approval.

EMS-105 Clinical Seminar and Practicum I **(0-0-9-3)**

Beginning experience in hospital observation and field experience. Students present case studies from their field or hospital experiences for informal discussion by the group. Emphasis is placed on the integration of theoretical knowledge obtained in EMS courses with the realities of practical field oriented patient care. Prerequisites: EMS 101, current N.C. EMT certification. Corequisites: BIO 102 and EMS 104 **OR** Departmental Approval.

EMS-106 Introduction to Pharmacology **(4-0-0-4)**

This course introduces commonly used drug measurements and the calculation of dosages. Parenteral techniques of drug administration are emphasized. Students will become familiar with drug forms, drug sources, and control of drug use. Drugs approved for EMT-Advanced Intermediate Administration will be discussed. Prerequisites: EMS 104, EMS 105 or Departmental Approval.

EMS-108 Clinical Seminar and Practicum II **(0-0-9-3)**

Planned learning in hospital and field settings is included. Emphasis is placed on the integration of theoretical knowledge with clinical practice. Care of patients with disorders of hydration, volume loss, and metabolism is included. Prerequisites: EMS 104, EMS 105 or Departmental Approval.

EMS-110 Pharmacology for EMS **(5-0-0-5)**

This course explores the fundamental classification and action of common chemotherapeutic agents. Emphasis is placed on the action and use of compounds most commonly encountered in the treatment of acutely ill patients. Prerequisites: EMS 106, EMS 108. Corequisites: EMS 111, EMS 201.

EMS-111 Clinical Seminar & Practicum III **(0-0-9-3)**

Guided learning in hospital and field settings is included. Techniques of drug administration, intervention, and side effects will be stressed. Management of acute cardiac disorders will be emphasized. Prerequisites: EMS 106, EMS 108. Corequisites: EMS 110, EMS 201.

EMS-112 Emergency Communications and Record Keeping **(2-2-0-3)**

This course prepares students to effectively utilize emergency communications equipment and to accurately complete required documentation of emergency medical care. Emphasis is placed on understanding communications systems and the expanding use of information management systems. Prerequisite: Departmental Approval.

EMS-113 Emergency Vehicle Operation **(2-2-0-3)**

This course examines the principles and practices governing the safe operation and maintenance of emergency vehicles. Emphasis is placed on motor vehicle laws affecting emergency vehicle operation and improved defensive driving and collision avoidance techniques. Prerequisite: Departmental Approval.

EMS-201 Advanced Life Support I **(4-2-0-5)**

In this course, anatomy and physiology of the cardiopulmonary systems are reviewed. Basic electrocardiography and the study of common cardiac arrhythmias are introduced. Coronary artery disease, acute myocardial infarction including early warning signs, electrical arrhythmias, and mechanical complications of heart disease are discussed. The laboratory provides programmed instruction in basic arrhythmia recognition and familiarizes the student with cardiac monitoring techniques and devices. Prerequisites: EMS 106, EMS 108. Corequisites: EMS 110, EMS 111.

EMS-202 Clinical Seminar and Practicum IV **(0-0-9-3)**

Guided learning experience in the care of patients with complex problems is included. Emergency room, intensive care unit, and field experience provide emphasis on the assessment and treatment of victims with unstable mental and physical problems of a critical nature. Prerequisites: EMS 108, EMS 110, EMS 201. Corequisites: EMS 204, EMS 208.

EMS-203 Emergency Psychiatric Care **(3-0-0-3)**

This course begins with an overview of the characteristics of various neurotic and psychotic disorders. Emergency intervention in patients who exhibit suicidal, assaultive, destructive, resistant, bizarre, toxic, amnesic, or paranoid behavior is covered. In addition, the student becomes acquainted with the paramedic role during the pre-hospital care of psychiatric patients and the legal commitment process for mandatory psychiatric treatment. Prerequisite: PSY 203 **OR** Departmental Approval.

EMS-204 Adjuncts for Airway Control and Ventilation **(2-0-0-2)**

This course is designed to acquaint the student with basic and advanced techniques of adjunctive airway control and ventilation of patients who are experiencing respiratory compromise. Anatomy and Physiology of the respiratory system is reviewed. Manual techniques of airway management and artificial respiration are reviewed and mechanical airway adjuncts are introduced. Emphasis is placed on advanced management techniques including endotracheal intubation. Prerequisite: Departmental Approval.

EMS-206 Clinical Seminar and Practicum V **(0-0-9-3)**

Experience in the practice of advanced life support skills used is provided. Emphasis is placed on the care of patients with cardiovascular disorders. Experience is also provided in the care of patients during the prepartal, interpartal, and postpartal phases of pregnancy. Prerequisites: EMS 202, EMS 204, EMS 208. Corequisite: EMS 207.

EMS-207 OB, Newborn, and Pediatric Emergencies **(4-2-0-5)**

Assessment and decision-making concerning obstetrical and gynecological emergencies are covered in this course. The student is prepared to recognize imminent birth and assist the mother in the delivery process. Recognition of both normal and complicated deliveries is expected. Emergency resuscitation techniques for the newborn, transportation of the high-risk infant, care related to traumatic abortion and to the rape victim are included. Emergency care specific to children concludes the course. Prerequisites: EMS 202, EMS 204, EMS 208. Corequisite: EMS 206.

EMS-208 Advanced Life Support II-Trauma **(2-2-0-3)**

Review of the prehospital management of trauma victims. Emphasis is placed on rapid assessment and intervention in patients with thoracic, central nervous system, soft tissue, musculoskeletal, and multiple systems injuries. Prerequisites: EMS 110, EMS 111, EMS 201. Corequisite: EMS 202.

EMS-210 Advanced Life Support III-Medical **(4-0-0-4)**

This course addresses medical and environmental injuries and illnesses in terms of advanced life support techniques, appropriate pharmacologic agents, and interventions. Prerequisite: EMS 110, EMS 111, EMS 201. Corequisite: EMS 202.

EMS-211 Clinical Symposium **(3-2-6-6)**

The course allows the augmentation of all emergency care skills including basic and advanced life support, psychiatric, and maternity care as well as patient handling techniques. Students are expected to function as team members in field experience. Prerequisite: EMS 206.

English

ENG-091 Guided Reading Skills **(3-0-3)**

A pre-college reading course that emphasizes both reading and responding to written material. Reading skills include vocabulary development, recognition of main ideas, identification of patterns of organization. Responding skills include paraphrasing and summarizing material, outlining, notetaking, and test taking. Prerequisite: None.

ENG-092 Mechanics of English Grammar **(3-0-3)**

A pre-college course designed to give students a thorough knowledge of basic English grammar. Special emphasis placed on identifying parts of speech and the construction of sentences. Prepares students for the terminology and concepts required for ENG 101. Prerequisite. None.

ENG-097 Adaptive Technology **(3-0-3)**

Designed to enable students to use technological hardware and software for reading, writing, and study skills. Includes use of the Kurzweil reader, choice of word processing programs, note taking with recorders, and use of self-advocacy in the academic setting. Prerequisite: None.

ENG-100 Reading Comprehension **(1-2-2)**

Development of skills introduced in ENG 091, including vocabulary development, identifying main ideas and organizational patterns. Emphasis is placed on demonstrating comprehension of written materials in a variety of situations, including group discussion, written analysis, objective and essay testing. Library orientation included in this course. Prerequisite: ENG 091 or placement test.

ENG-101 Fundamentals of English **(3-0-3)**

A review of basic grammar fundamentals, the course is designed to aid students in achieving standard, effective self-expression, with emphasis on improving and developing appropriate written and spoken communication in day-to-day situations in their work and in their social life. Prerequisite: None.

ENG-102 Composition **(3-0-3)**

Designed to aid students in further improvement of written communications, with emphasis on expository composing, through effective sentence structure, well-developed paragraphs, and fully organized compositions. Prerequisite: ENG 101 or ENG 111.

ENG-103 Report Writing **(3-0-3)**

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Topic selection, technical style, graphics, research strategies, and effective presentation are emphasized. All students are required to prepare a full-length report based on material in their chosen curriculum. Prerequisite: ENG 102 and second-year status in a major area.

ENG-107 Technical Composition **(3-0-3)**

Designed for engineering technology students, this course requires intensive writing experience in on-the-job short reports and documents including the following: definitions, product and mechanism descriptions, project, progress, situation, and site visit reports, form reports, letters of application and resumes. It emphasizes audience analysis, accuracy, specificity, and formatting for effective workplace communication. Prerequisite: ENG 102.

ENG-110 Writing With a Word Processor **(0-2-1)**

An introduction to composing using the word processor and applications software. Students will complete a specified number of written assignments for this or other classes and demonstrate proficiency in writing, editing, and printing. Prerequisite: None.

ENG-111 Grammar **(5-0-5)**

A basic course covering the fundamentals of English grammar. Emphasis is on grammar and sentence structure. Intended to provide the students with the basic tools for their roles in business. This course is designed primarily for students in the General Office curriculum. Prerequisite: None.

ENG-150 Grammar and Composition **(3-0-3)**

A review of grammar, usage, mechanics; an introduction to library skills; emphasis on organizing and developing paragraphs and themes. Prerequisite: Satisfactory score on grammar test or ENG 101.

ENG-151 Composition and Introduction to Literature **(3-0-3)**

A continuation of ENG 150 with emphasis on writing interpretative essays on thematic and structural topics in the short story, drama, and poetry. Prerequisite: ENG 150.

ENG-152 Composition, Research, and Documentation **(3-0-3)**

A study of research methods, including bibliographic resources, with emphasis on developing extended compositions, summaries, and a library research paper based on literary topics. Prerequisite: ENG 151.

ENG-204 Oral Communications **(3-0-3)**

A study of basic concepts and principles of oral communications. Emphasis is placed on the speaker's attitude, diction, voice, and the application of particular techniques to correct speaking habits and to produce effective oral presentations. Prerequisite: None.

ENG-206 Written Communication Skills **(3-0-3)**

Develops skills in the structure and strategy of writing action-producing letters and memorandums. Emphasis is placed on letters involving credit, collections, adjustments, complaints, orders, acknowledgments, remittances, inquiries, and job applications with resumes. Prerequisite: ENG 102.

ENG-215 English Literature I **(5-0-5)**

A survey of English literature from its Anglo-Saxon origins through the Middle Ages, the Renaissance, the Restoration and Eighteenth century with emphasis on representative writers and works in their historical context. Prerequisite: ENG 152

ENG-216 English Literature II **(5-0-5)**

A survey of English literature from the Romantic era through the Victorian and modern periods with emphasis on representative writers and works in their historical context. Prerequisite: ENG 152.

ENG-223 American Literature I **(5-0-5)**

A survey of American Literature from the colonial period with its utilitarian literature through the romantic and transcendental writers through realism. Major writers included are Hawthorne, Poe, Emerson, Whitman, Melville, Dickinson, Clemens, Henry James. This class requires tests, papers, a research paper, and novel/s. Prerequisite: ENG 152

ENG-224 American Literature II **(5-0-5)**

A survey of American literature from local color and regionalism through naturalism to modern literature. Major writers include Frost, Cather, Anderson, T.S. Eliot, O'Neill, Faulkner, Wolfe, plus modern poets. This class requires tests, papers, a research paper. Prerequisite: ENG 152.

ENG-225 Introduction to the Theatre **(3-0-3)**

An introduction to understanding and experiencing drama with a general exploration of the elements that comprise theatre: play attendance, acting, directing, the critic, history, and literature. Attendance at one play and in-depth reading of two plays are required. Prerequisite: ENG 151 or consent.

ENG-250 Creative Writing **(2-2-3)**

In a workshop environment designed to motivate and to assist in producing original work, students will write a variety of prose and poetry with the intent of publication. Prerequisite: Permission of the instructor.

ENG-260 Children's Literature **(3-0-3)**

This course is a study of the historical development of children's literature with critical analysis of the various literary genres available for children. Emphasis is on the principles of selecting literature for children and the methods for presenting it to children. Prerequisite: None.

ENG-1102 Communication Skills **(3-0-0-3)**

Designed to promote effective communication through correct language usage in speaking and writing. Prerequisite: ENG 100.

French

FRE-101 French I **(3-0-3)**

This course provides an introduction to the French language emphasizing listening, speaking, and writing with concentration on oral communication. Lab practice is expected of students. Prerequisite: None.

FRE-102 French II **(3-0-3)**

This course is a continuation of FRE-101. Lab practice is expected of students. Prerequisite: FRE-101 or placement test.

FRE-103 French III **(3-0-3)**

This course is a continuation of FRE-102. Lab practice is expected of students. Prerequisite: FRE-102 or placement test.

Geography

GEO-101 World Geography **(3-0-3)**

A world regional study that emphasizes the various geographic/cultural regions throughout the world. Major types of physical environments will be discussed in relation to economics, trade, and communications patterns. Prerequisite: None.

German

GER-101 German I **(3-0-3)**

Introduction to elementary German phonetics, grammar, and conversation. Designed for students with no previous knowledge of German. Prerequisite: None.

GER-102 German II **(3-0-3)**

Continuation of GER 101. Basic German phonetics, grammar, and conversation, coupled with readings of elementary German prose passages. Prerequisite: GER 101 or Placement test.

GER-103 German III **(3-0-3)**

Continuation of GER 102. Grammar review, intensive oral practice in German, and readings of German prose passages. Prerequisite: GER 102 or placement tests.

Diesel Vehicle Maintenance

HEV-1101 Diesel Engine Theory and Practice **(5-0-12-9)**

This course is designed as an introduction to the most common types of diesel engines. Each student will be subjected to the principles and theory of the diesel engine and required to work with several different types of engines. As the engines are rebuilt the proper use of hand tools and instruments will be taught. Standard procedures will be used in all engine work. Methods of checking the various parts of the engines will be employed. Prerequisite: None.

HEV-1102 Diesel--Electrical, Fuel, Lubricating and Cooling Systems **(7-0-12-11)**

This course continues from the engine course and will subject the student to the electrical system, fuel system, and lubricating systems. Each area will be treated as an individual unit. Each student will compare the various systems of heavy equipment. Preventive maintenance will be stressed in all areas. Types of fuel and the importance of pure and clean fuel will be taught. Tools, instruments, and machines related to these units will be presented. Prerequisites: HEV 1101, MEC 1101.

HEV-1103 Diesel--Hydraulic Systems, Steering, Suspension, Braking, Power Train, Injector Testing and Servicing **(6-0-12-10)**

This course continues from the engine course and will advance the student into the actual hydraulic systems, steering suspension, braking, cooling system, and injector servicing and testing. Each subject area will be treated as an individual unit taught separately. Each student will be required to study the difference in systems on various pieces of equipment. Tools, machines, and instruments used in the various aspects of this work will be presented. Prerequisite: HEV 1102.

HEV-1105 Diesel--Service and Repairs **(4-0-6-6)**

This course is constructed to require students to utilize all tools, instruments, and machines for analysis of all aspects of service and repair. The procedures employed in service and repair will be the same as expected in the industry. Each student will be expected to show individual ability and initiative in determining the troubled area of heavy equipment. Prerequisite: HEV 1103.

HEV-1107 Power Train Systems **(4-0-6-6)**

This course is designed to go into all types of power trains in heavy equipment. A study of the theory of power trains will be presented and applications of maintenance and repair will give each student an opportunity to review various types of power trains. Actual experience in the operation of power trains will be required to give each student an overview of a variety of experiences. Special tools and instruments used in maintenance and repair of power trains will be presented. Prerequisite: HEV 1103.

History

HIS-101 Science, Society, and Human Community **(3-0-3)**

An examination of the history of science and technology and the impact on the cultures in which they flourished. Major emphasis will be placed on the role of high technology and modern society, ecological values, and the realm of cultural dissipation and renewal in light of new technologies. Prerequisite. None.

HIS-201 World Civilization I **(3-0-3)**

This course traces the development of Western cultures from the Paleolithic through the rise and continuing influence of the Sumerian, Egyptian, Greek, and Roman worlds. Students will receive an in-depth, interdisciplinary, historical approach to the major Western civilizations, with brief excursions into the Oriental heritage. This course focuses on the analysis of historical movements and events, discussions of archaeological discoveries, and written responses to films and ideas of cultural significance. Prerequisite: None.

HIS-202 World Civilization II **(3-0-3)**

This course continues the investigations of the roots of Western civilizations from the early Middle Ages through the Renaissance, up to and including the Reformation and the Enlightenment. Students will focus on the major historical movements, the development of science in historical context, and the cultural interplay between Christian tradition and secularism. This course also centers on the analysis of key historical movements, discussions of Western arts and sciences, and written responses to films and slides depicting this period. Prerequisite: None.

HIS-203 World Civilization III **(3-0-3)**

This course examines the historical impact of modern Western culture from the seventeenth to the end of the twentieth century. With brief excursions into the Eastern world, students will primarily study the rise of the nation-states, the Romantic era, the Industrial Revolution, imperialism, the World Wars, and contemporary issues of political, economic, and ecological movements and figures, will develop an understanding of significant movements and figures, discuss key event and influential writing, and delineate the roots of conflict and interplay between technology and human values. Prerequisite: None.

HIS-210 American History I **(3-0-3)**

This course traces the rise of American culture from the earliest times to 1865. Students will receive an in-depth, interdisciplinary, historical approach to the major events comprising the development of the American nation. Prerequisite: None.

HIS-211 American History II **(3-0-3)**

This course continues the study of the development of American culture from 1865 to 1950. Students will analyze the major historical, political, social, artistic, and economic aspects of this period. Prerequisite: None.

HIS-212 American History III **(3-0-3)**

This course focuses on the major political, social, economic, artistic, and religious aspects of American culture in the 20th century, particularly from 1950 to the present. In addition, students will receive interdisciplinary instruction in the American city as a socio-political and cultural environment and the interplay between a technological society, ecological values, and the individual in historical context. Prerequisite: None.

Hotel and Restaurant Management

HRM-101 Hospitality Orientation **(3-0-0-3)**

Traces the growth and development of the hospitality industry from early inns to modern day food and lodging complexes that have become an integral part of our society. This course offers the student an overview of the hospitality industry; its size and scope; nature and scope of the market it serves; types of establishments it includes; how hotels and restaurants are organized; purposes and functions of each department within the hospitality operation. Emphasis will be placed on giving the student an insight into the problems in the hospitality industry and the importance of sound relationships with both the public and other operations within the industry. Prerequisite: None.

HRM-104 Food Purchasing I **(3-0-0-3)**

The student studies the functions and administrative operation of the food buyer's department hotels and restaurants. Various methods for purchasing including market studies, comparative price buying, yields, and quality control will be discussed. A study of the following food items will be made and specifications will be developed: fresh fruits and vegetables, processed fruits and vegetables, cereal products, beverages, and miscellaneous groceries. Prerequisite: None.

HRM-106 Front Office Procedures **(5-2-0-6)**

This course will present a study of the various aspects of the front office of the hotel and motor lodge. This will include the procedures in registration, night auditing, transcript preparation, daily reports, and accounting for all guests on the premises. A study of all office machines used in the field will be presented as well as standard check-in and check-out procedures; telephone requirements and reservations will be presented. A great deal of emphasis will be placed upon the crucial human and public relations responsibilities of the front office staff.

This course will also present a study of all forms, practices, and procedures required in accounting systems in hotels. Prerequisites: AOT 100, BUS 120.

HRM-108 Food Cost Control **(3-0-0-3)**

The student will be instructed in food cost accounting techniques as they relate to purchasing, receiving, storing, issuing, production, revenue, and inventory controls. Through use of case studies which will include menu and portion costing, food cost percentages, cost control records forecasts, and sales histories, the student will utilize these techniques in the actual operational sense. The student will be given an understanding of the importance of food cost control and the various techniques which relate to it as management tools. Prerequisite: MAT 110.

HRM-109 Food Purchasing II **(3-0-0-3)**

The student studies receiving and issuing techniques, storeroom operation, requisitioning, and record keeping as it relates to a food service operation. Government grading of food items and price buying will be discussed. Importance of analysis of end use of a food product as it relates to the quality of the food purchased will be shown. A study of the following food items will be made and specifications will be developed: milk and dairy products, fats and oils, poultry, eggs, and meats (beef, pork, veal, and lamb). Prerequisite: HRM 104, or MAT 096, or Departmental Approval.

HRM-110 Supervised Work Experience **(2-0-40-6)**

This course is planned to give the student an opportunity to work in the industry and gain practical experience. Jobs will be within the local economy. *Students will return to campus for periodic seminars.* Prerequisite: Successful completion of major courses through 3rd quarter or Departmental approval.

HRM-204 Hotel Information Systems **(2-2-0-3)**

The evolution and application of computerized technology in general is discussed prior to the illustration and study of specific hotel computer-system modules presently at work or soon to be introduced into innkeeping.

As an aid to better learning and to promote computer literacy, the BASIC computer language will be introduced with the student writing and running hotel-applicable software modules in the department's own unique computer laboratory. Prerequisite: First year curriculum or Departmental Approval.

HRM-205 Hospitality Management **(4-2-0-5)**

The role and applications of the computer as a management tool in hotels and restaurants will be experienced firsthand in the department's computer lab. During these lab sessions, the student will be exposed to software developed for the hospitality industry. This software will enable the student to explore the decision-making process and the importance of controls in order to make good management decisions. The student will apply these computer applications to management decisions. The student will develop a basic business plan with emphasis on menu concept and pattern, recipe index, purchasing specifications, equipment analysis, specification manual, labor staffing guides, expense reports, sales forecasts and profit and loss statements for a foodservice operation. Prerequisites: First-year curriculum and HRM 204, HRM 211.

HRM-207 Laws of Innkeeping **(6-0-0-6)**

Presents a highly technical subject in non-technical language. The course is designed to help the student understand the attitudes of the courts when an innkeeper is involved in litigation, and to create an awareness of the many responsibilities which the law imposes upon the innkeeper. The emphasis in this course is upon the reason for the rules of law and the values of interests involved. The object is to give the student an understanding and a sense of balance rather than a series of specialized rules to memorize. Prerequisite: None.

HRM-208 Supervisory Housekeeping **(3-2-0-4)**

Provides the student with a basic foundation in the scope, responsibilities, language, materials and problems of hotel housekeeping.

Special emphasis will be placed upon the criteria for the proper selection of guest room equipment and supplies as well as the techniques, tools and chemicals required to maintain both public and guest spaces in the high degree of cleanliness and readiness necessary for the comfort and safety of hotel patrons and guests. Practical application will be provided in the college's own Mountain Tech Lodge. Prerequisite: None.

HRM-209 Hospitality Personnel Management **(3-0-0-3)**

Gives to the student an acute awareness of the problems in an industry which offers service to the public performed by many employees; the problems of labor supply, selection, training, promotion, and morale. This course is really a compilation of the principles and practices already found to be of great value in hotels and restaurants in the management of employees. Emphasis is placed upon the general principles which may be applied in any size operation, from department heads to general manager of a large hotel. The needs and purposes of the employer, the welfare and desires of the employees and the interest and demands of the community will be taken into account as they influence employer-employee relations. Prerequisite: First Year Curriculum, or Departmental Approval.

HRM-211 Menu Engineering **(3-0-0-3)**

This course is designed to introduce the menu as a primary tool in Food Service Financial Management. The student will learn how pricing, merchandising, design, and content decisions determine menu development. The latest techniques for analysis of menus will be studied for their ability to maintain menu effectiveness and maximize profits. Each student will create market research, leading to the development of a restaurant concept and finally to the production of a photo ready paste-up of a menu for that concept. Prerequisite: First Year Curriculum or Departmental Approval.

HRM-212 Sales Promotion **(2-2-0-3)**

This course is designed to present a study of the advertising media used by hotels and restaurants. Methods and practices used to establish a favorable image and gaining public recognition will be presented. The civic responsibilities of the Hospitality Industry and social activities, such as conventions and special functions will be considered. Promotional projects used to advertise services will be carried out. Prerequisite: First Year Curriculum, or Departmental Approval.

HRM-213 Food Service Sanitation **(3-0-0-3)**

Sanitation is a subject of significance for the Foodservice Industry. This course deals with the basic facts of sanitation and how to prevent food-borne illness through an understanding and implementation of the principles of food protection. The NRA (National Restaurant Association Educational Foundation) Certificate will be granted upon successful completion of this course. Prerequisite: First Year Curriculum or Departmental Approval.

HRM-215 Beverage Cost Control **(3-2-0-4)**

Offers a systematic study of the principles of effective beverage cost controls. This covers the entire beverage operation from purchasing, receiving and storage, the preparation, service, and most important, sales and inventory accountability. Particular emphasis will be placed on calculating beverage costs and establishing standards of preparation and service. The course will concisely sum up the knowledge and principles of beverage cost controls that have taken operators years to learn by practical experience. In order to demonstrate how the principles are applied in a practical situation, a complete beverage department and cost accounting system has been created. Prerequisite: First Year Curriculum, or Departmental Approval.

HRM-218 Dining Room Management **(3-0-0-3)**

The student will be instructed in the supervisory aspects of dining room service. Lectures and demonstrations will focus on merchandising, increasing sales, control procedures, dining room logistics, and personnel issues involving hiring, training, motivation, and scheduling. In addition, the student will learn advanced dining room techniques, such as French cart service, wine service, and guest relations. Prerequisites: CSP 102 or Departmental Approval.

HRM-219 Advanced Hospitality Management **(2-4-0-4)**

In this continuation of HRM-205, students develop a business plan for a food service operation. The student will conduct feasibility studies and will research real estate and financial backing options. As part of the business plan, the student will design and lay out the kitchen, dining room, banquet room, lounge, and lobby of the food service operation, using 1/4" template scale drawings. Prerequisites: First Year Curriculum and HRM 205.

Industrial Management Technology

ISC-102 Industrial Safety **(3-0-3)**

Problems of accidents and fire in industry. Management and supervisory responsibility for fire and accident prevention. Additional topics cover accident reports and the supervisor; good housekeeping and fire prevention; machine guarding and personnel protective equipment; state industrial accident code and fire regulations; the first aid department and the line of supervisory responsibility; job instruction and safety instruction; company rules and enforcement; use of safety committees; insurance carrier and the Insurance Rating Bureau, Occupational Safety & Health Act (OSHA); and advertising and promoting a good safety and fire prevention program. Prerequisite: None.

ISC-105 Introduction to Production **(5-0-5)**

A broad overview of the processes used to convert raw material into usable consumer or producer products. Different manufacturing processes and modern techniques used to plan, monitor, and control the process will be discussed. Prerequisites: None.

ISC-202 Quality Control **(3-2-4)**

The course covers the principles and techniques of statistical quality control and statistical process control (SPC). Prerequisite: MATH 214.

ISC-209 Plant Layout **(1-4-3)**

A practical study of factory planning and emphasis on the most efficient arrangements of work areas to achieve lower manufacturing costs. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment. Effective management of men, money and material in a manufacturing operation. Prerequisite: None.

ISC-211 Time Study-Work Measurement **(3-2-4)**

This course covers the principles and practices of time study, work simplifications, and motion economy. Prerequisite: None.

Law Enforcement Technology

LET-101 Introduction to Criminal Justice **(5-0-5)**

This course is designed to provide the student with a philosophy of criminal justice with its legal limitations in our society and the primary responsibilities of the various agencies of the criminal justice system. The basic processes of criminal justice are discussed. The student receives an orientation relative to job opportunities. Prerequisite: None.

LET-102 Introduction to Criminology (5-0-5)

A general course designed to introduce the student to the causation of crime and criminal deviant behavior. The course presents the problem of crime historically and the aspects of contemporary efforts to meet the social problems caused by criminal behavior. Prerequisite: None.

LET-105 Introduction to Correction (4-0-4)

Course examines the functional position of American corrections in the criminal justice system; the interrelationship of correction with the police and the courts. The history of corrections is considered as a societal response to deviance. Emphasis is given to the functioning of corrections as part of the criminal justice system and the need for cooperation between the various facets of the system. Court and institutional administration and the legal rights of inmates are covered. Prerequisite: None.

LET-106 Probation and Parole (3-0-3)

Institutional and non-institutional treatment of the offender considering modern philosophy and methods in treatment of adult criminals and juvenile delinquents in correctional institutions. Probation as a judicial process and parole as an executive function are examined, and community-based correctional programs and the use of pardon are studied. Prerequisite: None.

LET-107 Police Liability (3-0-3)

Theoretical and practical liability problems facing criminal justice practitioners and administrators. Emphasis entering on deadly force, excessive force, and nonlethal weapons. General policy and procedure development to include certification, training and restrictive use of special police equipment. Pursuit liability and off-duty problems will be included in discussion. Prerequisite: None.

LET-110 Introduction to Juvenile Justice (5-0-5)

A general survey of juvenile behavior considers individual and social problems; theories of delinquency causation, and methods of prevention and correction. The course presents a general overview of the Juvenile Court and the system of juvenile justice. Prerequisite: None.

LET-111 Defense Tactics (1-2-2)

This course presents the police role in physical arrests as a defensive role. The philosophy behind a defensive role will be discussed. Proper attitude, physical conditioning, and self-discipline will be emphasized. The student will be given instruction and practical application in arrest techniques, searches, control holds, and handcuffing. Prerequisite: None.

LET-112 Legal Research (5-0-5)

This course is designed to aid the student in legal research. Special attention will be placed on recent North Carolina and United States Supreme Court decisions that have major implications on the three components of the criminal justice system. Students will research cases and document findings for classroom presentation. Prerequisite: LET 101.

LET-115 Criminal Law I (3-0-3)

A course designed to present the concepts of criminal law and to provide a legal groundwork for those who seek to enter the criminal justice field. Prerequisite: None.

LET-116 Criminal Justice Internship (0-10-1)

Internships are designed to demonstrate the competency of the student through extension of the learning initiated in previous Criminal Justice courses. Prerequisite: Permission of the department chairperson.

LET-125 Judicial Process **(4-0-4)**

This course provides the student with a review of court systems, procedures from incident to final disposition, principles of constitutional, federal, state, and civil laws as they apply to and affect law enforcement. Prerequisite: LET 101.

LET-200 Crime Prevention **(3-0-3)**

This course is designed to make the student aware of the many opportunities for lawbreaking open to the potential criminal. Various types of preventive securities such as locks, lighting, alarms, neighborhood watch programs, public presentations on crime prevention to interested groups by the students, etc., will be studied. Prerequisite: None.

LET-201 Motor Vehicle Law **(3-0-3)**

A study of the traffic enforcement codes with primary emphasis placed on North Carolina Law as it relates to motor vehicles. Prerequisite: None.

LET-202 Traffic Planning and Management **(3-2-4)**

This study covers the topic of traffic management and enforcement giving an overview of problems as they exist today. Attention is given to legislation, organization of the traffic unit, responsibilities to the traffic function of the various units within the law enforcement agency, enforcement tactics, evaluation of the traffic program effectiveness, and allocation of personnel and materials. Accident investigation is stressed. Prerequisite: None.

LET-205 Criminal Evidence **(4-0-4)**

The kinds of legal evidence and the rules governing the admissibility of evidence in courts are explored in this course. Rules of evidence that apply in civil, criminal, and federal courts are discussed. Topics include: the hearsay rules, dying declarations, privileged communications, and the concepts of relevancy, competency and materiality. Prerequisite: LET 101.

LET-206 Community Relations **(3-0-3)**

This course provides the student with an understanding of community structure as they relate to minority groups, peer groups, socioeconomic groups, leader groups, and group relations. Emphasis is on the organization and function of these groups as they relate to the profession of criminal justice-protective service. Prerequisite: None.

LET-210 Criminal Investigation I **(4-0-4)**

This course introduces the student to fundamentals of investigation, crime scene search, recording, collection and preservation of evidence. Sources of information, interview and interrogation, case preparation, and court presentation will be discussed. Prerequisite: Permission of Department Chairperson.

LET-211 Introduction to Criminalistics **(4-2-5)**

A general survey of criminal investigation includes the methods and techniques used in modern scientific investigation of crime, with emphasis on the practical use of these modern methods by the student. Laboratory techniques will be demonstrated and the student will use the scientific laboratory equipment. Prerequisite: LET 210.

LET-212 Narcotics, Drugs, and Human Behavior **(3-2-4)**

This course familiarizes the student with North Carolina drug laws and introduces the identification and classification of dangerous drugs. Emphasis is on the various effects that the different drugs have on the human body and in the temperament of individuals. Prerequisite: Permission of Department Chairperson.

LET-213 Criminal Investigation II **(4-0-4)**

This is a continuation of LET 109 with emphasis on specific offenses such as homicide, burglary, robbery, larceny, narcotics, arson, and sex. Prerequisite: LET 210.

LET-216 Criminal Law II **(3-0-3)**

A continuation of LET 105 with emphasis on North Carolina Law. The course deals with the concept of criminal responsibility and competency; the law of arrest, and search and seizure; rights of arrested persons; and the laws governing wiretapping and electronic surveillance. The case book approach is used, with leading cases assigned as outside reading and for class discussion. Prerequisite: LET 115.

LET-217 Patrol Procedures **(3-0-3)**

This course includes methods of personnel distribution and assignment, operation of vehicles on patrol, answering calls of various types. It provides the opportunity to develop perception and observation concerning person, places, and things. Safe driving techniques and uses of equipment are presented. Prerequisite: Permission of Department Chairperson.

LET-220 Police Organization, Administration and Supervision **(5-0-5)**

Principles of organization and administration, personnel management and supervision, training, communication, records, property maintenance, and miscellaneous services are introduced. Prerequisite: None.

LET-250 Topics in Criminal Justice...Law Enforcement I **(5-0-0-5)**

This course provides credit for approved special education of college level beyond minimum standards (basic) training and outside the regular curriculum. All credit awarded by this method must be documented by the department chairperson. Prerequisite: Departmental Approval.

Mathematics

MAT-090 Guided Mathematics **(5-0-5)**

Topics include manipulation of whole numbers, decimals, fractions, and percentages with practical problems illustrating each operation. In addition, the relationships between percentages, fractions, and decimals are covered. Prerequisite: None.

MAT-091 Plane Geometry **(5-0-5)**

Introduction to Plane Geometry including areas of plane figures, angles, volume, Pythagorean Theorem, elementary construction, proofs, right triangles, circles, lines, congruent triangles, polygons, and similarities. Prerequisite: Algebra I or MAT 093.

MAT-093 Algebra I Review **(5-0-5)**

This one quarter review of Algebra I covers all topics in MAT-096/097. Designed for students who have successfully completed Algebra I and need review before attempting a higher level math course. Prerequisite: MAT 097/placement test/Algebra I.

MAT-094 Algebra II Review **(5-0-5)**

A one quarter review of Algebra II which covers all topics in MAT-098/099. Designed for students who have successfully completed Algebra II and need review before attempting a higher level math course. Prerequisite: MAT 099/placement test/Algebra II.

MAT-096 Introductory Algebra Part I **(5-0-5)**

This is the first of a two-course sequence covering addition, subtraction, multiplication, and division of integers, polynomials, and algebraic factors; simplification of fractions; solution and graphing of linear equations in one and two variables; solution of quadratic equations by radical expressions; and the Pythagorean Theorem. Prerequisite: None.

MAT-097 Introductory Algebra Part I **(5-0-5)**

This course is a continuation of MAT 096. Prerequisite: MAT 096.

MAT-098 Intermediate Algebra Part II **(5-0-5)**

This is the first of a two-course sequence which continues Introductory Algebra I. Topics in Algebra I will be reviewed and extended. These topics will be added: absolute value equations and inequalities, fractional exponents, radicals having indices greater than 2, complex numbers, quadratic and rational inequalities, function and relations, and introductory trigonometry. Prerequisite: Mat 097, or MAT 093, or equivalent.

MAT-099 Intermediate Algebra Part II **(5-0-5)**

This course is a continuation of MAT-098. Prerequisite: MAT-098.

MAT-100 Basic Mathematics **(5-0-5)**

Introduction to mathematics including operations with numbers, fractions, percent, dimensional analysis, signed numbers, elementary algebra, linear equations, basic plane and solid geometry with emphasis on applications. A-B Tech credit only. Prerequisite: entrance requirements.

MAT-101 Algebra and Trigonometry I **(5-0-5)**

Number systems of various bases are introduced. Fundamental algebra operations, and rectangular coordinate system, as well as fundamental trigonometric concepts and operations are introduced. The application of these principles to practical problems is stressed. Prerequisite: MAT 100 (or proficiency).

MAT-102 Algebra and Trigonometry II **(5-0-5)**

A continuation of MAT 101. Advanced algebraic and trigonometric topics include quadratics, logarithms, determinants, matrices, progressions, the binomial expansion, complex numbers, solution of oblique triangles and graphs of the trigonometric functions. Prerequisite: MAT 101.

MAT-103 Analytical Geometry and Calculus **(5-0-5)**

The fundamental concepts of analytical geometry, differential and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivative, differentials, rate of change, the integral and basic integration techniques. Application of these concepts to practical situations are stressed. Prerequisite: MAT 102.

MAT-105 Introduction to Algebra **(3-0-3)**

This course stresses algebraic fundamentals including algebraic terms and laws, solution of first-degree equations, and statement problems. Fundamental statistical methods will be introduced. A-B Tech credit only. Students who have credit for MAT 100 may not take this course for credit. Prerequisite: None.

MAT-106 Introduction to Mathematics **(3-0-3)**

This course embodies an introduction to mathematics including operation with whole numbers, fractions, percents, metric terminology, elementary algebra, and statistics with emphasis on practical application involved in the Allied Health field. Prerequisite: None.

MAT-107 Calculus II **(5-0-5)**

This course covers techniques of integration; integration of transcendental functions; series expansion of functions; and an introduction of differential equations. Prerequisite: MAT 103.

MAT-110 General College Mathematics **(5-0-5)**

This course is designed to provide a review of the fundamentals of arithmetic. Topics covered will include operations with real numbers, percentages and applications which students encounter in everyday life. Prerequisite: None.

MAT-111 Math for Real Estate **(3-0-3)**

This course is a review of the fundamental operations of arithmetic applied to rational numbers; practical applications of percent problems relating to real estate; ratio and proportion; and geometry relating to real estate. Prerequisite: None.

MAT-112 Mathematics of Finance **(3-2-4)**

This course consists of practical application of business financial transactions involving analysis of statements, interest, present value, yield, discount, compound interest, annuities, extinction of debt and depreciation. Use of modern calculating equipment will be employed. Prerequisite: MAT 105 or MAT 100.

MAT-150 Precalculus Mathematics **(5-0-5)**

Functions and graphs, linear and quadratic functions, polynomial and rational functions, exponential and logarithmic functions, and trigonometric identities. Prerequisite: MAT 102 or satisfactory score on the math placement test.

MAT-151 Calculus and Analytic Geometry I **(5-0-5)**

Topics in analytic geometry, limits, derivatives, techniques of differentiation, applications, logarithms, exponential functions, and methods of integration. Prerequisite: MAT 150 or satisfactory score on the math placement test.

MAT-152 Calculus II **(5-0-5)**

Continuation of MAT 151, including work in the calculus of transcendental functions, methods of integration, areas, volumes, centroids, calculus of integration, and calculus of logarithmic and exponential functions. Prerequisite: MAT 151.

MAT-160 Elementary Statistics **(5-0-5)**

A study of statistical methods including fundamental statistical methods, basic statistical distributions, measures of central tendency and dispersion, statistical inference, and sampling techniques. Prerequisites: MAT 093 or MAT 097 or MAT 105.

MAT-202 Calculus III (5-0-5)

Continuation of MAT 152, including further study in differential and integral calculus of polynomial, rational, logarithmic and exponential functions; partial derivatives; and multiple integration. Prerequisite: MAT 152.

MAT-203 Calculus IV (5-0-5)

Continuation of MAT 202, multi-variables, vector functions and their derivatives, complex numbers and functions and applications. Prerequisite: MAT 202.

MAT-204 Applied Mathematics (5-0-5)

A study of geometric principles and trigonometry as relate to engineering and related shop applications. Emphasis will be placed on practical application of geometric theorems, right triangle and oblique triangle trigonometry and dimensional analysis. Prerequisite: MAT 102.

MAT-1101 Fundamentals of Mathematics (5-0-0-5)

Analysis of Basic Operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Introduction to algebra used in trades. Practical applications. Prerequisite: None.

MAT-1103 Geometry (3-0-0-3)

Fundamental properties and definitions, plane and solid geometric figures, selected general theorems, geometric construction, areas and volumes of solids. Geometric principles are applied to shop operations. Prerequisite: MAT 1101.

MAT-1104 Trigonometry (3-0-0-3)

Practical problems in Geometry relating to machine shop are reviewed. Trigonometric ratios, solving problems with right triangles and solution of practical problems are covered in this course. Solution of oblique triangles will be introduced. Prerequisite: MAT 1103.

MAT-1123 Machinist Mathematics (3-0-0-3)

Introduces tapers and wedges, sine bar, dovetails, threads, angle cuts, hole-circle spacing, gears, and indexing with emphasis on application to the machine shop. Practical applications and problems furnish the trainee with experience in geometric propositions and trigonometric relations to shop problems. Prerequisite: MAT 1104.

MAT-1203 Trigonometry (3-0-0-3)

A basic review of mathematics will form a foundation for a study of trigonometry of right triangles, oblique triangles, and dimensional analysis. Applications to typical problems found in the tool and die shop will be presented and solutions will be found by using mathematics. Prerequisite: MAT 1123.

MAT-1204 Compound Angles (3-0-0-3)

The application of trigonometry and geometry is presented to solve compound angle problems. This course will use as many practical problems as possible to enable the student to work with typical problems. Prerequisite: MAT 1203.

Mechanical Engineering Technology

MEC-101 Machine Processes (2-4-4)

A course to acquaint the student with basic machine tools of industry through lectures, demonstrations, and hands-on practice. It will include the study of safety practices; measuring instruments; characteristics of basic machine tools, materials, and cutting tools; and actual experience on lathe, drill press, milling machines, shaper, and grinder. Prerequisite: None.

MEC-105 Statics **(5-0-5)**

Concepts and basic principles of statics. Parallel concurrent, and non-current force systems in coplanar and noncoplanar situations. Concepts of friction. Prerequisites: MAT 102, PHY 111.

MEC-110 Cooperative Work Experience **(0-0-30-3)**

Upon completing this course, students should be able to exhibit a positive attitude toward a career in Mechanical and Manufacturing Engineering Technologies. Students should also demonstrate a sufficient understanding of duties and tasks associated with these disciplines and be able to implement results of applied experience in both class and laboratory environments. Prerequisite: 50 credit hours earned in residence toward an engineering technology degree with a minimum 2.5 GPA in the major area and Departmental Approval.

MEC-111 Manufacturing Processes I **(3-3-4)**

An introduction to the field of manufacturing processes; topics include the fundamentals of casting, metal forming, machining, metal joining, and processes related to manufacturing. Practical lab work stresses hands-on experience with commercially available machining and cutting tools, welding equipment and production materials. Laboratory exercises include industry field trips. Prerequisite: None.

MEC-112 Manufacturing Processes II **(3-3-4)**

Theory and application of industrial fabrication techniques; topics in polymer science and mold construction, assembly line layout, time and motion studies, and industrial safety are discussed. Prerequisite: MEC 111 or Departmental Approval.

MEC-205 Strength of Materials **(5-0-5)**

Study of the basic principles by which stresses and strains are induced in beams, members and structures by imposed loads. Analyses of stresses are made as applied to beams, columns, thin-walled cylinders, spheres, riveted and welded joints, and machine components. Prerequisite: MEC 105.

MEC-206 Dynamics **(4-0-4)**

Study of change of position or motion as it affects machines and their mechanical components. The subjects of mathematical vectors and kinematics used for design of mechanisms and cams, etc., are introduced. Dynamics formulae are presented and explained. Work problems are provided. Prerequisite: MEC 105.

MEC-208 Machine Design **(3-3-4)**

Upon completing this course, students should be able to complete a machine design project involving fasteners, permanent joints, shafts and couplings, bearings, belt and chain drives, gears, clutches and brakes, and springs. Designing machine parts will be based on form, function and strength of materials. Students will need to demonstrate proficient use of vendor catalogs and manuals in the selection of machine parts. All machine/product designs must be formally presented at the end of the quarter. Prerequisite: MEC 205.

MEC-211 Engineering Materials **(3-3-4)**

Upon completing this course students should be able to define physical and mechanical properties of materials; perform and evaluate standard tensile, impact, and hardness tests of metals, discuss the crystalline structure of metals and their characteristics; describe the effects of heat treating on ferrous metals, their production and the properties of ferrous and non-ferrous metals; enumerate the different heat treating processes, the equipment used and perform simple heat treating procedures; describe the properties of thermoplastic and thermosetting polymers and ceramic and composite materials; and discuss material selection on the basis of specific properties. Laboratory exercises include industry field trips. Prerequisite: None.

MEC-212 Automation I **(4-4-6)**

Upon completing this course students should be able to describe the function of industrial robotics and automation; understand the operating principles of hydraulic and pneumatic controls, electronic control loop characteristics using programmable logic controllers, input and output devices; explain concepts and applications of servo systems; program plc's using both statement list and ladder logic formats. Prerequisite: MEC 235 or Departmental Approval.

MEC-213 Machine Design **(2-2-3)**

Study of factors affecting the design and selection of machine elements and components. Applications of principles of mechanics, properties of materials, and manufacturing processes fundamental to the design of machine components will be included. Prerequisite: MEC 205.

MEC-214 Automation II **(3-4-5)**

Upon completing this course students should be able to describe and select industrial robots for various automated manufacturing applications; design and program a typical robotic pick and place machine; understand concepts of automated work cells involving flexible manufacturing systems and hard automation, and computer aided manufacturing; and identify assembly techniques for increasing productivity through the application of automated manufacturing technology. Prerequisite: MEC 212 or Departmental Approval.

MEC-216 Vibrational Analysis and Preventive Maintenance **(4-4-6)**

Upon completing this course students should be able to describe the principles and theories that underlie simple mechanical vibrations; discuss machine design operating characteristics such as RPM, type of bearings, gear frequencies, aerodynamic/hydraulic frequencies etc.; select appropriate vibration meters, vibration analyzers, oscilloscopes, measurement transducers, and accelerometers for specific application and demonstrate a good understanding of instrumentation; demonstrate knowledge of data interpretation and diagnose machinery vibration; and perform dynamic balancing on industrial machinery. Prerequisite: MEC 206 or Departmental Approval

MEC-230 Industrial Motor Controls **(4-2-5)**

Upon completing this course students should be able to exhibit skills necessary perform installation and troubleshooting on the types of switchboards, power switchgear or motor control center found in industrial plants or commercial buildings. Topics include basic functions common to all motor controls, fault protection, visible disconnects, overload protection, full-voltage non-reversing starters, various reduced voltage starters, basic control logic, basic protective relay logic electromechanical control relay, solid-state control relays, motor contactors, disconnect switches, and circuit breakers. Prerequisite: None

MEC-235 Hydraulics and Pneumatics **(3-3-4)**

Upon completing this course students should be able to exhibit a knowledgeable understanding of basic theories of hydrostatic, hydrodynamic, and pneumatic systems; perform basic computations related to industrial hydraulic and pneumatic designs; sketch symbols and explain their use; design and trouble shoot simple circuits using fluid power pumps and motors, cylinders, fluid reservoirs, plumbing and related control components, and filtration devices. Laboratory exercises include industry field trips. Prerequisite: MAT 101 or Corequisite: PHY 111 or Departmental Approval.

MEC-1101 Elementary Hydraulic Principles **(2-3-0-3)**

Students will be introduced to the principles of hydraulic systems as they apply in the heavy equipment area. The theory of hydraulic systems must be understood thoroughly before the students can progress into actual work on hydraulic systems. Various aspects of heavy equipment will be used to demonstrate these principles and theories. Prerequisite: None.

MEC-1115 Treatment of Ferrous & Non-Ferrous Metals **(1-0-3-2)**

Investigates the properties of ferrous metals and tests to determine their uses. Instructions will include some chemical metallurgy to provide a background for the understanding of the physical changes and causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloy of special steel, classification of steels, and cast iron will be topics for study. Prerequisite: None.

MEC-1124 Metallurgy **(3-0-0-3)**

An introductory course in metallurgy, a basic study of properties of metals and alloys and their purpose, standards and classification, heat treatment, and troubleshooting. A thorough knowledge of the effects of heating and cooling is very essential to the welding student. Prerequisite: None.

MEC-1203 Metallurgy **(3-0-0-3)**

This is a study of a special group of steels used by the tool and die industry. Students are concerned with the selection, machining, and heat treating of these steels. Troubleshooting to find the reason for possible failure of the steel and the remedy required will be an important part of this course. Prerequisite: None.

MEC-1209 Hydraulics and Pneumatics **(3-0-0-3)**

A basic study of the principles of power hydraulics. Component parts such as reservoirs, strainers, filters, piping and fittings, motors, pumps, and valves will be thoroughly studied. Practical circuits and systems will be covered especially as they are used in the tool and die industry. Prerequisite: None.

Machinist

***MES-1101 Machine Shop I** **(3-0-12-7)**

An introduction to the machinist trade and the potential it holds for craftsmen. Deals primarily with the identification, care and use of basic hand tools and precision measuring instruments. Elementary layout procedures of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice. Corequisites: MAT 1101, BPR 1104.

***MES-1102 Machine Shop II** **(3-0-12-7)**

Advanced operations in layout tools and procedures, power sawing, drill press, surface grinder, milling machine shaper. The student will be introduced to the basic operations of the cylindrical grinder and will select projects encompassing all the operations, tools and procedures thus far used and those to be stressed throughout the course. Prerequisite: MES 1101, Corequisites: MAT 1103, BPR 1105.

***MES-1103 Machine Shop III** **(3-0-12-7)**

Advanced work in the engineer lathe, turning, boring and threading machines, grinders, milling machine and shaper. Introduction to basic indexing and terminology of spur, helical, and worm gears and wheels. The trainee will use precision tools and measuring instruments such as vernier height gages, protractors, comparators, etc. Basic exercises will be given on the turret lathe and on the tool and cutter grinder. Prerequisite: MES 1102. Corequisites: MAT 1104, BPR 1106.

***MES-1104 Machine Shop IV** **(2-0-6-4)**

Development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly and inspection. Additional processes on the turret lathe, tool and cutter grinder, cylindrical and surface grinder, advanced milling machine operations, etc. Special procedures and operations, processes and equipment, observing safety procedures faithfully and establishing of good work habits and attitudes acceptable to the industry. Prerequisite: MES 1103. Corequisite: MAT 1123.

MES-1107 Introduction to Computer Numerical Control **(4-4-0-6)**

Introduction to Numerical Control and Computer Numerical Control Machine tools and the potential for those working in machine shops to include applications of numerical control dimensioning systems and axis designation, tape codes, and formats, part programming fundamentals, and advanced computer assisted programming. Prerequisites: MAT 1104 or proficiency in geometry and trigonometry, MES 1103. Corequisites: MAT 1123, MES 1104.

***MES-1112 Machine Shop Processes** **(1-0-3-2)**

An introduction to machine shop dealing with the identification, care and use of basic hand tool and precision measuring instruments. Elementary layout procedures and processes of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice. Prerequisite: None.

Medical Laboratory Technology

MLT-107 Clinical Chemistry I (3-0-0-3)

A study of the biochemical processes involved in human metabolism, particularly carbohydrates and proteins. The study involves emphasis on methodologies used in the clinical chemistry laboratory. Prerequisite: None

MLT-112 Clinical Chemistry II (3-0-0-3)

A continuation of MLT 107, Clinical Chemistry I, concentrating on electrolytes, blood gases, enzymes, and hormones. Prerequisite: MLT 107.

MLT-114 Immunohematology I **(3-2-0-4)**

Principles and theories of immunology and immunohematology including serology, blood group antigens and antibodies. Prerequisite: None.

MLT-118 Immunohematology II **(1-2-0-2)**

A continuation of Immunohematology I with an introduction to the selection and processing of donors, preparation and use of blood and blood components, special immunohematology conditions and methodologies. Prerequisite: MLT 114.

MLT-122 Hematology I **(2-4-0-4)**

An introduction to the field of Medical Laboratory Technology. Methods and theory of specimen collection (phlebotomy) are introduced. A study of the formed elements of blood. Normal and abnormal values, and tests for determining them. Preparation and examination of normal blood smears. Prerequisite: None.

MLT-123 Microbiology I **(3-2-0-4)**

An introduction to the routine techniques of clinical microbiology and a study of the methods used for the isolation and identification of the medically important bacteria. Prerequisite: None.

MLT-124 Hematology II **(1-4-0-3)**

A continuation of Hematology I with an emphasis on Leukocytes, platelets, and the examination of blood smears. An introduction to erythrocyte and leukocyte abnormalities is covered. Hemostasis theory and screening tests for hemostasis are studied. Prerequisite: MLT 122.

MLT-125 Microbiology II **(3-2-0-4)**

A continuation of MLT 123 with the addition of the study of methods used for the isolation and identification of mycobacteria, medically important fungi, and antimicrobial susceptibility testing. Prerequisite: MLT 123.

MLT-126 Urinalysis/Parasitology **(2-4-0-4)**

A study of human parasites with practice in techniques used in identifying parasites in feces and other body specimens. A study of the formation of urine and urinalysis with emphasis on the role urinalysis plays in the diagnosis of disease. Prerequisite: BIO 101.

MLT-211 Instrumentation **(2-0-0-2)**

A study of the operating principles and methodologies of laboratory instruments including routine maintenance and quality control. Field trips to various health facilities and industries will be included. Prerequisite: MLT 112

***MLT-213 Clinical Experience I** **(0-0-30-10)**

Following a general hospital orientation, students will receive supervised clinical experience in one of the following clinical areas: 1) hematology and phlebotomy, 2) clinical chemistry, 3) microbiology, or 4) blood bank, serology and phlebotomy. Successful completion of MLT 213, 214, 215, and 216 will give the student experience in all four areas. Prerequisites: All 100 level MLT courses, BIO 102, CHM 104, and Clinical Approval.

***MLT-214 Clinical Experience II** **(0-0-30-10)**

A continuation of MLT 213. Prerequisite: MLT 213.

***MLT-215 Clinical Experience III** **(0-0-30-10)**

A continuation of MLT 214. Prerequisite: MLT 214.

***MLT-216 Clinical Experience IV** **(0-0-30-10)**

A continuation of MLT 215. Prerequisite: MLT 215.

Music

MUS-101 Introduction to Music **(3-0-3)**

A survey of music history and appreciation with emphasis on understanding music in its historical context, its various forms and masterpieces. Prerequisite: None.

Associate Degree Nursing

NUR-101 Fundamentals of Nursing I **(3-6-0-6)**

This course provides an introduction to basic concepts of health and the role of the Associate Degree Nurse as a member of the contemporary health team. Emphasis is placed upon basic human needs and the concept of biopsychosocial adaptation throughout the life span. The nursing process is introduced as a means of planning and implementing care. Medical terminology is integrated throughout. Concurrent laboratory experience provides the opportunity for developing competencies in basic nursing skills. Prerequisite: CPR Certification.

***NUR-103 Fundamentals of Nursing II** **(5-0-9-8)**

This course centers around the principles of homeostasis and the concept of adaptation. The student learns about broad groups of therapeutic agents, gains proficiency in dosage calculations, and learns principles of administering therapeutic agents by various routes to adult and pediatric clients. Also included is the study of the body's fluid distribution and normal ranges and functions of the various electrolytes. Clinical experiences in acute care and long-term care facilities provide the opportunity for the student to implement basic nursing care, administer medications, and monitor intravenous fluid administrations. Prerequisites: NUR 101, BIO 101, NUT 101, CHM 101, CPR Certification.

***NUR-105 Fundamentals of Nursing III** **(5-0-9-8)**

This course includes basic physical assessment of adult and pediatric clients with emphasis on normal findings. Consideration is given to client's inability to adapt in various pathologies and progresses to a study of immune disorders, neoplasms, hematological dysfunction, and gastrointestinal dysfunctions. In the laboratory, the student learns basic techniques for physical assessment, gastrointestinal intubation, colostomy care, and venipuncture. In the hospital setting, the student adapts care to meet needs of individual clients with common health problems. Prerequisites: BIO 102, NUR 103, CPR Certification.

NUR-125 Nursing Procedures in Radiography **(3-2-0-4)**

This course acquaints the student with nursing procedures and techniques used in the general care of the patient with emphasis on the role of the radiologic technologist in various nursing situations. The basic pharmacology of various contrast agents and basic medications used in the radiology department will also be considered. Prerequisite: Acceptance into the program as a curriculum student and must have completed a Community CPR course within the three months prior to the beginning of the course.

***NUR-206 Psychiatric Nursing** **(4-0-6-6)**

In this course, the fundamental dynamic concepts of the mind and mental health, the agencies of the mind, and personality adjustment mechanisms are reviewed as a background for the study of the mental disorders...neuroses, psychoses, and personality disorders. Emphasis is placed upon symptomatology and treatment and especially upon the related nursing care. Principles of a therapeutic nurse-patient relationship are learned, and an opportunity to apply them is provided in a local psychiatric hospital. Prerequisites: PSY 203, NUR 105.

***NUR-207 Maternity Nursing** **(4-0-6-6)**

Maternity nursing is designed to allow the student to assess needs, plan, implement, and evaluate care for clients during the prenatal, intrapartial, and postpartal periods of reproduction. Emphasis is placed on the family-centered approach to maternal-child care. Subject material focuses on the normal biopsychosocial adaptations concurrent with the child-bearing process with briefer considerations given to major maladaptive processes. Throughout the course the student is assisted in the acquisition of knowledge and skills necessary for the promotion of comfort, health, and safety of the child-bearing family. Supervised clinical experiences in Labor and Delivery, Post-Partum, and the Newborn nursery provide opportunities for students to relate knowledge and acquire nursing skills. The family-centered approach to the client care is emphasized throughout. Prerequisites: BIO 103, NUR 105, CPR Certification (adult/infant/child) Co-or Prerequisite: PSY 105.

***NUR-210 Medical Surgical Nursing I** **(7-0-15-12)**

This course is designed to guide the student in acquiring knowledge and skills in order to meet the physical, psychological and social needs of the adult and pediatric client with respiratory and cardiovascular problems. The student utilizes the nursing process in caring for clients with respiratory and cardiovascular problems in various clinical settings. Prerequisites: NUR 206, NUR 207, PSY 105, CPR Certification (adult/infant/child).

***NUR-211 Nursing Seminar I** **(3-0-0-3)**

Attention is given to the history and organizational structure of nursing and to the development of the new graduate's responsibilities and opportunities in the area of employment, involvement in continuing education, and the relationship of the ADN graduate to the health team members. Prerequisite: NUR 210.

***NUR-212 Medical Surgical Nursing II** **(7-0-15-12)**

This course is designed to guide the student in acquiring knowledge and skills to meet the physical, psychological and social needs of the adult and pediatric clients with problems involving metabolic processes from the availability of nutrients to the excretion of waste materials. Through selected adult and pediatric experience, the student is given the opportunity to utilize the nursing process in implementing care. Prerequisite: NUR 210, CPA Certification (adult, infant, child).

***NUR-213 Nursing Seminar II** **(0-2-0-1)**

The purpose of this course of study is to help students utilize principles of management in implementing the nursing process for individuals and groups. The leadership role and various methods of managing client care are emphasized. Prerequisite: NUR 212.

***NUR-214 Medical Surgical Nursing III** **(8-0-18-14)**

This course is designed to assist the student in acquiring knowledge and skills in order to meet the physical, social and psychological needs of adult and pediatric clients with sensorineural and musculoskeletal dysfunction. Clinical experiences provide an opportunity for the students to utilize concurrent and previously acquired knowledge and skills in managing care for groups of clients. Prerequisite: NUR 212, CPR Certification (adult, infant, child).

Nutrition

***NUT-100 Nutrition: Culinary** **(3-0-0-3)**
A study of basic nutritional principles and their relationship to human health, including basic guidelines for maximizing the nutritional quality of quantity food preparation. Prerequisite: None.

NUT-101 Nutrition **(3-0-0-3)**
A study of basic nutritional principles and their relationship to human need and adaptation. The course begins with fundamental components of food and their relationship to normal basic needs. It continues with meeting nutritional needs of individuals at various stages of the life cycle and the individual response to food, both physiological and psychological as altered by the disease state. Prerequisite: None.

General Office Technology

OTC-100 Spelling and Punctuation Study **(3-0-3)**
A course designed to help the student overcome spelling difficulties and build punctuation ability. Concentration will be placed on rules of spelling, use of the dictionary, and punctuation study. Prerequisite: ENG 111 or 101.

OTC-110 Practical Office English **(5-0-5)**
This course gives the prospective office technologist practice in the rudiments of fundamental English, including punctuation, capitalization, sentence structure, spelling, syllabication and proofreading of typewritten work. It incorporates the use of office reference books in conjunction with the office-related practice materials. Prerequisites: ENG 111, OTC 100, AOT 101.

OTC-214 Machine Transcription **(2-3-3)**
The student will learn how to transcribe mailable letters and other office communications by transcription from machines onto the microcomputer. The student will be expected to produce from tapes mailable business correspondence which is free from punctuation, spelling, and formatting errors. Prerequisite: AOT 105, OTC 110 or AOT 125.

OTC-216 Payroll Procedures **(3-2-4)**
A course in payroll recordkeeping including the accounting aspects of maintaining employee earnings records, the computation and recordkeeping of deductions, and the preparation of employee and employer reporting forms. Prerequisite: BUS 117.

***OTC-218 Cooperative Education** **(0-20-2)**
In order to receive credit for OTC 218, the student must secure and successfully complete 220 hours of actual employment in a job approved by the department co-op instructor. This experience should allow the student to relate more meaningfully to the world of work and to a specific place in the world of work. Prerequisite: Successful completion of all course work.

OTC-272 Vocabulary Building **(2-0-2)**
The expansion of the student's active and passive vocabularies is the major goal of this course, with special emphasis given to the vocabulary of business. The study of prefixes, suffixes, root words, synonyms, and homonyms provides the basis for an introduction to selected new words and the foundation for growth in the use of new words and the determination of meanings of previously unknown words. Prerequisite: None.

Phlebotomy

PBT-1101 Basic Concepts in Phlebotomy **(9-2-0-10)**

Basic concepts in the areas of health care delivery systems, anatomy and physiology, collection equipment, blood collection procedures, infection control, specimen processing, quality control and safety are presented. Corequisite: PBT 1102.

PBT-1102 Phlebotomy Clinical Experience **(0-0-12-4)**

Performance of venipuncture and microcollection techniques in a clinical facility. Instruction in the use of computers for data necessary for performance of phlebotomy procedures. Corequisite: PBT 1101.

Physical Education

PED classes may not be audited.

PED-101 Beginner Tennis **(0-3-1)**

Designed to give beginners a thorough knowledge of the history, rules, and strategy as well as the fundamental skills of tennis. Prerequisite: None.

PED-102 Intermediate Tennis **(0-3-1)**

A follow-up course to PED 101 with emphasis on game strategy and doubles play. Prerequisite: PED 101 or Departmental Approval.

PED-103 Advanced Tennis **(0-3-1)**

Designed to provide students with an opportunity to place into practice the skills developed in PED 101 and PED 102. Emphasis is placed on the ability to perform advanced shots, spins, pace, and strategy. Prerequisite: PED 102 or Departmental Approval.

PED-105 Beginner Bowling **(0-3-1)**

The fundamentals of ball selection, grips, stance, and delivery are taught along with rules, history, scoring, and the general theory of space coverage. Prerequisite: None.

PED-106 Intermediate Bowling **(0-3-1)**

Provides an opportunity to practice the knowledge and skills acquired in PED 105. Instruction is supplemented through films and participation at bowling lanes. Prerequisite: PED 105 or Departmental Approval.

PED-115 Beginner Golf **(0-3-1)**

A course designed for teaching beginners the grip, stance, swing, and use of the various clubs, along with history and etiquette of play. Prerequisite: None.

PED-116 Intermediate Golf **(0-3-1)**

Emphasis is placed on rules and etiquette, procedures for playing and the swings involved. Playing time at local courses is included. Prerequisite: PED 115 or Departmental Approval.

PED-120 Beginner Volleyball **(0-3-1)**

Designed to include the fundamental skills, history, and strategy of the game. Prerequisite: None.

PED-121 Intermediate Volleyball **(0-3-1)**

The development of the necessary skills and strategies for playing volleyball. Emphasis is placed on proper techniques of play and development of basic skills used in playing. Prerequisite: PED 120 or Departmental Approval.

PED-125 Beginner Basketball **(0-3-1)**

Designed to teach the history, rules, and strategy as well as the fundamental skills of basketball. Prerequisite: None.

PED-126 Intermediate Basketball **(0-3-1)**

Emphasizes physical conditioning and the necessary skills for participation in basketball games. Prerequisite: PED 125 or Departmental Approval.

PED-130 Beginner Physical Fitness **(0-3-1)**

Designed to develop the ability to demonstrate vigorous physical action. It includes endurance, power, strength, and agility with the purpose of continuing these traits into smooth, effective action both at work and in play. Prerequisite: None.

PED-131 Intermediate Physical Fitness **(0-3-1)**

A continuation of PED 130 and is designed to direct the student in a program of physical development and coordinated movement. Prerequisite: PED 130 or Departmental Approval.

PED-132 Advanced Physical Fitness **(0-3-1)**

A follow-up course to PED 131 with greater emphasis on rhythmic activity and emphasis on a planned program for future fitness. Prerequisite: PED 131 or Departmental Approval.

PED-133 Aerobics I **(0-3-1)**

This course is designed to improve cardiovascular endurance and enable students to participate in a physical conditioning program that combines movement with music. Prerequisite: None.

PED-134 Aerobics II **(0-3-1)**

This course is a follow-up to PED 133 in which students will continue a physical conditioning program that combines movement with music. Prerequisite: PED 133 or Departmental Approval.

PED-135 Nature Hiking **(1-2-2)**

Study includes instruction on how to equip and care for oneself on the trail, including clothing, hygiene, and necessary equipment. Trail hikes will be taken to practice learned knowledge. Prerequisite: None.

PED-136 Walk-Jog-Run **(0-3-1)**

This course prepares students to participate in a developmental fitness program through walking, jogging, or running. Conditioning exercises, nutrition, stretching, fluid needs, and injury prevention are topics of discussion. Prerequisite: None.

PED-137 Bench Aerobics **(0-3-1)**

This course is a continuation of the practice and study of physical conditioning introduced in PED 133 and 134 involving cardiovascular conditional through low to no impact step aerobics. A step aerobics bench will be utilized in combining low joint stress movement with music along with some upper body conditioning. Prerequisite: PED 133 or PED 134, or Departmental Approval.

PED-140 Beginner Softball **(0-3-1)**

Designed to include the fundamental skills, history, and rules of the game. Prerequisite: None.

PED-141 Intermediate Softball **(0-3-1)**

Includes the development of necessary skills and knowledge for playing softball with emphasis on proper techniques and strategies for playing softball. Prerequisite: PED 140 or Departmental Approval.

PED-145 Fundamental Sports **(1-2-2)**

Designed for students who desire participation in a variety of sports activities including basketball, volleyball, archery, badminton, tennis, softball, gymnastics, fitness, bowling, and golf. Emphasis is placed on acquainting the students with the rules and knowledge of each activity so that participation in sports will be encouraged. Prerequisite: None.

PED-150 Beginner Gymnastics **(0-3-1)**

Teaches the fundamentals of gymnastics on the parallel bars and mats. Prerequisite: None.

PED-160 Beginner Weight Training **(0-3-1)**

The course presents the basic skills of body development through weight training. Prerequisite: None.

PED-161 Advanced Weight Training **(0-3-1)**

A continuation of the principles learned in PED 160. The student should gain knowledge of the principles of strength development and improve physically. Prerequisite: PED 160 or Departmental Approval.

PED-163 Body Sculpting **(0-3-1)**

Body sculpting is a course designed to improve physical strength, endurance and body awareness through use of small hand held weights and resistance bands while focusing on specific muscle groups. A 12-minute cardiovascular fitness phase and some flexibility training will be included in each class. Prerequisite: None.

PED-170 Fit and Well for Life **(1-2-2)**

Content of this course emphasizes wellness through the study of nutrition, weight control, stress management, substance abuse, and consumer facts on exercise and fitness. The student is taught to plan a personal lifelong fitness program based on individual need, abilities, and interests. Prerequisite: None.

PED-171 Modern Dance **(0-3-1)**

Dance is emphasized as an art form and physical activity. Basic dance patterns and designs, terminology and etiquette, elements of composition for expressive, creative, rhythmic movements. The course stresses the basic fundamentals of body movement executed to music. Prerequisite: None.

PED-172 Stretch and Tone **(0-3-1)**

This is a course designed to improve muscle tone, cardiovascular fitness and body awareness. Standing and floor stretches are combined with toning exercises to promote flexibility, range of motion and body shaping. A low intensity aerobic phases is included for developing cardiovascular fitness while decreasing joint stress. Correct form and functional understanding of injury prevention are stressed. Prerequisite: None.

PED-177 CPR/First Aid and Safety **((1-2-2)**

The theory and practice of basic first aid, cardiopulmonary resuscitation, and the care and prevention of injuries are presented. The course involves the theory and skills to implement basic cardiac life support following cardiac arrest. Emphasis is placed on related safety consciousness and the education and prevention aspects of controlling cardiovascular disease. Leads to Red Cross First Aid and Safety Certificate and to Adult, Child, and Infant CPR Certification. Prerequisite: None.

PED-180 Personal Health and Wellness **(3-0-3)**

Emphasis is placed on achieving personal wellness. Focus is on nutrition, weight control, fitness, sexuality, drugs, environmental health, and stress related diseases. Information and behavior necessary to approach health and wellness scientifically and to develop confidence in judgments affecting personal health and wellness. Prerequisite: None.

PED-190 Adapted Physical Fitness **(0-3-1)**

Adapted physical fitness is a course designed to improve physical strength, endurance and range of motion while focusing on individual needs. Exercises are designed and adapted to serve those persons with special needs or handicapping conditions while improving physical fitness, body awareness and independent living. Prerequisite: None.

Philosophy

PHI-101 Ethics and Human Values **(3-0-3)**

This course focuses on the use of reason as a guide in value-making and ethical decisions. The course centers on making moral decisions, resolving moral dilemmas, and examining various schools of ethical thought. Specific moral problems will be examined. Prerequisite: None.

PHI-102 Introduction to Philosophy **(3-0-3)**

Basic concepts and problems of philosophy including readings from both classical and contemporary philosophers. Topics include introduction to inductive and deductive logic, freedom and determinism, mind-body interaction, moral judgments, and the nature of knowledge. Prerequisite: None.

PHI-103 History of Western Philosophy **(3-0-3)**

American, European, and other Western philosophic movements with emphasis on distinctly Western philosophies such as pragmatism, realism, and humanism. Prerequisite: None.

PHI-200 Religions of the World **(3-0-3)**

A comparative survey course of world religions including the philosophical implications of religious experience and the development and different forms of the issues of belief and reason in modern thought. Prerequisite: PHI 102.

Photography

PHO-201 Introduction to Photography **(1-2-2)**

Instruction includes the processing and printing of film, photographing scenes, examining legal aspects of crime photography, preparing of courtroom photo evidence, lighting at a crime scene, caring for photographic equipment. Prerequisite: None.

Physics

PHY-105 Introduction to Physics **(4-0-4)**

This course introduces the student to the basic principles of electrical and radiation physics. It begins with a review of basic mathematics to include unit conversions. The fundamentals of mechanics, properties of matter, heat, atomic structure, electromagnetic radiation, electricity, and magnetism are presented. Finally, the fundamentals of x-ray generation and circuitry will be presented. Prerequisite: None.

PHY-111 Physics I - Mechanics **(3-2-4)**

This course will cover scalars, vectors, units, metric system, translational motion, forces, Newton's Laws, work energy, linear momentum, and collisions. Prerequisite: MAT 100

PHY-112 Physics II - Rotation and Matter **(3-2-4)**

This course will cover rotational motion, torques, rotational work and energy, angular momentum, mechanical properties of matter, thermal properties of matter, and thermodynamics. Prerequisite: PHY 111.

PHY-113 Physics III - Electricity and Magnetism **(3-2-4)**

This course will cover electric forces, electric fields, electric energy, electric potentials, capacitance, current, resistance, direct current circuits, magnetism, electromagnetic induction, and alternating current circuits. Prerequisite: PHY 111 or Departmental Approval.

PHY-114 Physics IV - Light, Sound and Wave Phenomenona **(3-2-4)**

This course will cover vibrations, waves, sound, electromagnetic waves, light, wave optics, and topics in modern physics based on wave phenomenona. Prerequisite: PHY 111

PHY-201 General Physics I **(3-2-4)**

The first of three calculus-based physics courses. Topics include measurement of physical quantities, one dimensional motion, vectors, two dimensional motion, forces, work, energy, momentum, circular motion, rotational motion, torques, moments of inertia, rotational Kinetic energy and angular momentum. Prerequisite: MAT 151 or MAT 103 with corequisite MAT 151.

PHY-202 General Physics II **(3-2-4)**

The second of three calculus-based physics courses. Topics include scillatory motion, mechanical properties of matter, thermal properties of matter, Kinetic theory of matter, thermodynamics, electric forces, electric fields, electric potentials, electric properties of matter, capacitance, current, resistance and direct current circuits. Prerequisite: PHY 201 and Corequisite MAT 152.

PHY-203 General Physics III **(3-2-4)**

The third of three calculus-based physics sources. Topics include magnetic forces, magnetic fields, magnetic properties of matter, electromagnetic induction, inductance, mechanical waves, sound waves, electromagnetic waves and light waves. Prerequisite: PHY 202.

PHY-1100 Industrial Science **(3-2-0-4)**

An introduction to physical principles and their application in industry. Topics in this course include properties of matter, basic electrical principles, heat, principles of force, motion, work energy, and power. Prerequisite: MAT 1101.

PHY-1101 Applied Science I **(3-2-0-4)**

An introduction to physical principles and their application in industry. Topics in this course include measurement, properties of solids, liquids, and gases; basic electrical principles. Prerequisite: MAT 1101.

PHY-1102 Applied Science II **(3-2-0-4)**

The second in a series of two courses of applied physical principles. Topics introduced in this course are heat and thermometry, and principles of force, motion, work, energy, and power. Prerequisites: PHY 1101.

Practical Nursing

PNE-1112 Fundamentals of Nursing **(6-2-2-8)**

This course provides an introduction to the care of the patient through a study of the basic needs of all persons in health or in illness. The nursing process is the basis for learning the principles of nursing. Basic skills for meeting the patient's needs are developed in lab practice and by performance in the clinical setting. Prerequisite: None.

PNE-1113 Pharmacology **(2-0-0-2)**

Sources, effects, legalities and usage of drugs as therapeutic agents, prescriptions of medications, drug classifications and nursing implications are taught in this course. The student gains proficiency in utilizing the apothecary metric system conversion in determining dosage and administering medications by the various route to patients. The student gains the ability to implement the nursing process as it relates to the administration of medications. Prerequisite: None.

***PNE-1120 Clinical I Medical-Surgical** **(0-0-15-5)**

This portion of the program consists of care of selected patients in the hospital. Careful supervision is given the student to insure maximum opportunity to develop nursing skills. Assignments are correlated to classroom instruction with emphasis on total patient care. Prerequisites: PNE 1112, PNE 1113, BIO 111, NUT 101, CPR Certification. Corequisite: PNE 1122.

***PNE-1122 Medical-Surgical Nursing I** **(8-0-0-8)**

This course is a beginning study of illness conditions. Emphasis is placed on the assessment of adult patients' needs and in the planning, implementing and evaluating of their care. Therapeutic intervention pertinent to disorders of the musculoskeletal system and the female reproductive system as well a study of infectious diseases, cancer, and pre- and post-operative care and disorders of the immune system are taught in this course. Principles and skills related to intravenous therapy are introduced. Prerequisites; PNE 1112, PNE 1113, BIO 111, NUT 101. Corequisite: PNE 1120.

***PNE-1123 Maternal and Newborn Care** **(4-0-0-4)**

This course is designed to present a family-centered approach as the theoretical basis for this course. Emphasis is placed on assessment of the female during the normal antepartum, labor and delivery, and post-partum stages as well as the needs of the normal newborn and in the planning, implementing and evaluating of their care. Also included is a theoretical overview of common complications of the maternal cycle with a brief consideration given to the newborn. Drug therapy is correlated with an appropriate course content. Prerequisite: BIO 111.

***PNE-1130 Clinical II Maternal-Newborn and Medical-Surgical Nursing (0-0-18-6)**

This course is planned to give the student opportunities to develop skills and implement the nursing process in the care of the maternity patient and the newborn. The student will also further develop skills and competencies as learned in PNE 1120. Prerequisites: PNE 1120, PNE 1122, PNE 1123, CPR (BLS) Certification. Corequisite: PNE 1132.

***PNE-1132 Medical-Surgical Nursing II (10-0-0-10)**

This course continues the study of Medical Surgical Nursing I, especially the pathophysiological process and therapeutic intervention pertinent to the disorders of the respiratory, circulatory, and gastrointestinal systems as well as the study of urology and the male reproductive system. Prerequisites: PNE 1120, PNE 1122. Corequisite: PNE 1130.

***PNE-1134 Pediatric Nursing (2-0-0-2)**

This course is designed to guide the student in acquiring knowledge and skills in order to utilize the nursing process to meet the physical, psychological, and social needs of the pediatric patient. The etiology, treatment, and nursing care in common disorders, and illness that affect the infant, and child are presented. Prerequisites: PNE 1122, PSY 105.

***PNE-1140 Clinical III-Pediatrics and Medical-Surgical Nursing (0-0-18-6)**

This course is designed to provide the student opportunities to refine and develop skills and implement the nursing process in caring for patients across the life span. Learning experiences are selected in acute care and long term care facilities to assist the student to develop skills necessary to provide comprehensive care to medical-surgical patients. Emphasis is placed upon assisting the student in the transition to a responsible member of the health team. Prerequisites: PNE 1130, PNE 1132, PNE 1134, CPR (BLS) Certification. Corequisite: PNE 1142.

***PNE-1142 Medical-Surgical Nursing III (10-0-0-10)**

This course is a continuation of Medical-Surgical Nursing II, especially the pathophysiological process and therapeutic intervention pertinent to the disorders of the nervous, endocrine, integumentary systems and sensory organs. Also included is the therapeutic role of the nurse in emotional or developmental disturbances in individuals. Prerequisites: PNE 1130, PNE 1132. Corequisite: PNE 1140.

***PNE-1144 Nursing Seminar (2-0-0-2)**

This course is structured to assist the individual in making the transition from the role of student to that of a functional member of the health team. Legal and vocational responsibilities are stressed. Prerequisite: 4th quarter status.

Political Science

POL-103 State and Local Government (4-0-4)

This course is a study of state and local government, state-federal interrelationships, the functions and prerogatives of the branches. Problems of administration, legal procedures, law enforcement, police power, taxation, revenues, and appropriations are included. Special attention is given to North Carolina governments. Prerequisite: None.

POL-110 Comparative Political Cultures **(3-0-3)**

Political comparisons between nations, political systems, emphasizing specific factors in the development, growth, and decline of national politics. Prerequisite: None.

Psychology

PSY-097 Behavioral Development **(3-0-3)**

This course is designed to provide students with the opportunity to become involved with relating to others and to become more aware of themselves. Activities will deal with vocational, educational, and personal concerns. Various exercises, simulations, and other activities (both group and individual) to carry out these objectives will be utilized. Prerequisite: None.

PSY-101 Introduction to Psychology **(3-0-3)**

This is an introductory survey of history and schools of thought in psychology, including topics such as intelligence, learning, motivation, and emotions. Prerequisite: None.

PSY-105 Human Growth and Development **(3-0-0-3)**

Human Growth and Development provides knowledge of the basic principles of physiological and psychological stages of the individual through the entire life span. Prerequisite: None.

PSY-151 Applied Psychology for Law Enforcement **(3-0-3)**

This course draws heavily from the field of social psychology and psychological concepts routinely applied in criminal justice. The primary subject areas discussed will be the psychology of conformity, communication, propaganda, persuasion, self-justification, aggression, prejudice, interview and confession, motivation, stress, neurosis, psychosis, personality disorders, sexual deviation, alcoholism and drug addiction. Prerequisites: PSY 101, PSY 203.

PSY-201 Child Psychology **(3-0-3)**

Psychological development from infancy to adolescence, covering the development of learning, language, cognitive processes, social relations, intelligence, and moral/value systems. Also, specific developmental problems will be discussed along with possible remedial procedures. Prerequisite: PSY 101.

PSY-203 Abnormal Psychology **(3-0-3)**

This is a study of the major abnormal behavior patterns and ways by which these aberrant patterns of thinking and acting are developed. Some attention is given to prevention of mental illness and the study of normal defense and escape mechanisms. Prerequisite: PSY 101.

PSY-206 Applied Psychology **(3-0-3)**

A study of the basic principles of psychology, including perception, emotions, motivation, adjusting, and communicating, that promote growth and development both on the job and in one's personal life. Prerequisite: None.

PSY -210 Industrial/Organizational Psychology **(3-0-3)**

The study of people in the workplace; the motivation and satisfaction/dissatisfaction with work, influences on performance, leadership, organizational structures, processes of communication, conflict and decision-making, selection and training, measurement of individual contributions in the organization, work design, and the process of change. Prerequisite: PSY 101.

PSY-1101 Human Relations **(3-0-0-3)**

A study of basic principles of human behavior. The problems of the individual are studied in relation, group membership, and relationships within the work situation. Prerequisite: None.

Radiologic Technology

RAD-100 Introduction to Radiology Technology **(3-0-6-5)**

This course is designed to acquaint the new student to the profession of Radiologic Technology and to prepare them for the clinical components of the program. The rules and philosophies of the radiography program, radiology departments, and radiology profession are discussed in detail. Other topics presented include the history of the profession, ethics, career advancement, and professional organizations. Issues such as certification, licensure, and professional development are also discussed. An orientation to the clinical component of the program is also included which allows the students to familiarize themselves with each of the clinical affiliates that they will later rotate through. Prerequisite: Acceptance into program as curriculum student.

RAD-102 Radiographic Technique I **(4-0-0-4)**

This course is designed to teach the beginning radiologic technology student the fundamentals of exposure, darkroom, and radiation protection. Conditions necessary for x-ray production, fundamental factors in the production of a radiograph and qualities of a radiograph with emphasis being directed toward the controlling factors of the qualities will be covered. Darkroom principles will include darkroom construction, processing methods: manual and automatic, chemical properties of the developer and fixer, film construction, current media for holding x-ray film. The student will also learn the importance of radiation protection and how to apply the basic principles to protect the patient, themselves, and others. Prerequisite: Acceptance into program as curriculum students.

RAD-103 Medical Terminology **(3-0-0-3)**

This course is designed to help the student develop a vocabulary and proficiency in medical terminology as well as terminology used specifically in radiologic technology. Topics include Latin and Greek roots, prefixes, suffixes, and the abbreviations and symbolism necessary for a complete understanding of the terms used in the health field of radiologic technology. Prerequisite: None

RAD-106 Clinical Education I **(0-0-15-5)**

The student will begin clinical rotations through the affiliate radiology departments under the direct supervision of a registered technologist. They will be allowed to apply the previously learned principles of radiographic exposure, radiation protection, and patient positioning. Clinical competency evaluations will be performed on areas previously covered in the laboratory and classroom. Prerequisites: RAD 100, RAD 111, RAD 102, and NUR 125.

RAD-111 Radiographic Positioning I **(3-2-0-4)**

This course presents an introduction to the basic principles and terminology of radiographic positioning techniques. The student will learn the positions necessary for radiography of the chest and abdomen as well as the different body systems contained in the abdomen along with the related anatomy. Students will observe, practice, and be evaluated according to a competency based system in a laboratory and classroom. Prerequisite: Acceptance into program as curriculum student.

RAD-112 Radiographic Technique II **(4-0-0-4)**

Radiographic Technique II is a continuation of RAD 102. During this quarter, students will be taught principles involved in conversion techniques, formulas and problem solving for density, photographic effect, inverse square law and magnification. Included also will be information relative to imaging modalities such as image intensification, cinefluorography, tomography, stereoscopy. Tube construction which produces line spread function, modulation, transfer function and subtraction techniques will be included. Prerequisite: RAD 102.

RAD-114 Clinical Education II **(0-0-15-5)**

This course is a continuation of RAD 106. Students continue to be evaluated on competency levels under the supervision of a registered technologist that have previously been covered in the classroom and laboratory. Prerequisite: RAD 121 and RAD 106.

RAD-115 Ethics and Communications in Radiography **(3-0-0-3)**

This course is designed to reinforce the concepts of medicolegal as well as ethical obligations of the radiographer. The role of the radiographer in patient-practitioner interactions will also be explored. The student will also be given the opportunity to complete a resume and mock job interview as an example of communications involved in securing a job as a radiographer. Prerequisite: Acceptance as curriculum student.

RAD-121 Radiographic Positioning II **(3-2-0-4)**

This course is a continuation of RAD 111. Emphasis will be placed on the positioning techniques necessary to adequately visualize the appendicular skeleton and the anatomy demonstrated. Students will observe, practice, and be evaluated according to a competency based system in a laboratory situation as well as in the classroom. Prerequisite: RAD 111.

RAD-124 Clinical Education III **(0-0-15-5)**

This course is a continuation of RAD 114. The student will continue to improve basic skills learned in the classroom, lab, and previous clinical experiences, and continue to perform competency examinations. Supervision will be provided by a registered radiologic technologist. Prerequisite: RAD 131 and RAD 114.

RAD-125 Radiographic Technique III **(4-0-0-4)**

This course is a continuation of RAD 112. Emphasis will be placed on the application of the principles of physics to the creation and utilization of x-rays. Electromagnetism, components of the x-ray machine, production of x-rays, x-ray interactions in matter, and the effects of x-ray characteristics on image quality prepare students to apply them in the clinical setting. Prerequisites: RAD 112 and PHY 105.

RAD-131 Radiographic Positioning III **(3-2-0-4)**

This course is a continuation of RAD 121. The student will continue to learn the positions and anatomy involved in radiography of the appendicular and axial skeleton as well as special trauma views of the immobile patient. Students will observe, practice, and be evaluated according to a competency based system in a laboratory situation as well as in the classroom. Prerequisite: RAD 121 and BIO 107

***RAD-134 Clinical Education IV** **(0-0-24-8)**

This course is a continuation of RAD 124. The student will be under the supervision and will apply ionizing radiation and patient positioning with a registered technologist in the vicinity. Competency levels will continue to be evaluated as they are reached. The student will also be allowed to begin rotations through the specialty imaging areas such as CT, MRI, ultrasound, nuclear medicine, special procedures, and radiation therapy on an elective basis. Prerequisite: RAD 201 and RAD 124.

RAD-201 Radiographic Positioning IV **(3-2-0-4)**

This course is a continuation of RAD 131. The student completes laboratory and classroom assignments for the entire skeleton and major systems of the body. Student will observe, practice, and be evaluated according to a competency based system in a laboratory situation as well as in the classroom. Prerequisite: RAD 131, BIO 107, and BIO 108.

RAD-203 Clinical Education V **(0-0-24-8)**

This course is a continuation of RAD 134. The student will continue to enhance their skills and perform all types of radiographic procedures under the supervision of a registered technologist. Elective rotations in the speciality areas will be used to complement clinical experiences. Competency levels will continue to be evaluated. Prerequisite: RAD 134.

RAD-206 Imaging Modalities **(4-0-0-4)**

This course is designed to introduce unique areas in the imaging modalities. Topics covered include nuclear medicine, ultrasound, radiation therapy, computerized tomography, MRI, and special procedures. Prerequisite: RAD 201 and RAD 134.

***RAD-212 Clinical Education VI** **(0-0-24-8)**

This course is a continuation of RAD 203. The student will continue to enhance their skills and perform all types of radiographic procedures under the supervision of a registered technologist. Elective rotations in speciality areas will be used to complement clinical experiences. Competency levels will continue to be evaluated. Prerequisite: RAD 203

RAD-213 Advanced Radiographic Seminar **(4-0-0-4)**

This course is designed to help the student prepare to take the American Registry of Radiologic Technologists. Students will participate in a series of simulated registries and use the results to help identify any educationally weak areas. Seminars on important topics and/or particularly weak areas will be presented. Prerequisite: All previous related and major curriculum courses.

RAD-214 Radiographic Equipment and Quality Assurance **(3-2-0-4)**

This course is a continuation of RAD 125. Unique radiographic equipment, such as image intensifiers and automatic exposure controls will be discussed in detail. In addition, other specialized techniques will be presented. Concepts of equipment quality assurance will be stressed and specific tests will be performed by the students and analyzed to determine problem areas. Prerequisite: RAD 125.

RAD-215 Radiographic Pathology **(3-0-0-3)**

This course presents the student with an overview of the study of diseases. Emphasis will be placed on the study of the more common diseases that involve the major body systems with particular attention to those that are most often diagnosed with radiographic or other imaging procedures. Prerequisite: BIO 107, BIO 108, and RAD 201.

RAD-223 Clinical Education VII **(0-0-24-8)**

This course is a culmination of all the clinical courses. Students will concentrate on refining weak skills or investigating areas of particular interest under the supervision of a registered technologist. Competency levels will continued to be evaluated. Terminal competencies will be completed this quarter. Prerequisite: RAD 212.

RAD-225 Radiobiology & Radiation Protection **(4-0-0-4)**

This course is designed to provide the student with a thorough knowledge of the effects of radiation on biological organisms from the cell up to the entire being. Emphasis is placed on the short and long-term genetic and somatic effects to humans from high and low levels of radiation exposure. The course stresses the understanding and use of available methods that the technologist may use to keep patient and staff exposure to a minimum. Regulations dealing with radiation protection are covered as well as devices used to detect radiation levels. Prerequisite: BIO 107, BIO 108, and RAD 125.

RAD-234 Radiographic Film Evaluation **(3-0-0-3)**

This course presents the student with a logical film evaluation procedure to assist them in differentiating between diagnostic and poor quality radiographs. Students will present a variety of radiographs which will be critiqued for quality and demonstrated anatomy. Poor quality radiographs will be discussed to discern the best methods to be used to improve the film to a diagnostic level. Prerequisites: RAD 201, RAD 125, and RAD 215.

Sociology

SOC-101 Introduction to Sociology **(3-0-3)**

A study and analysis of humankind as social creatures: origins and development of culture, social organization and institutions, and social change. Prerequisite: None.

SOC-201 Social Problems **(3-0-3)**

A course designed to create a knowledge and awareness of the problems in society today to fit the students for involvement in those problems that affect their personal lives. Emphasis is on the nature, definition, and analysis of major social problems. While the primary stress is on the sociological point of view, information from other fields in the social sciences is incorporated. Prerequisite: None.

Spanish

SPA-101 Spanish I **(3-0-3)**

This course provides an introduction to the study of the Spanish language and culture. The instruction emphasizes comprehension, speaking, reading and writing skills. Lab practice is expected of students. Prerequisite: None.

SPA-102 Spanish II **(3-0-3)**

This course is a continuation of SPA-101. Lab practice is expected of students. Prerequisite: SPA-101. Lab practice is expected of students. Prerequisite: SPA-101 or placement test.

SPA-103 Spanish III **(3-0-3)**

This course is a continuation of SPA-102. Lab practice is expected of students. Prerequisite: SPA-102 or placement test.

SPA-201 Intermediate Spanish I **(3-0-3)**

This course is a continuation of the study of the Spanish language and culture. The course includes a grammar review, intensive conversational practice, cultural and literary readings and writing of simple compositions. Lab practice is expected of students. Prerequisite: SPA-103 or placement test.

SPA-202 Intermediate Spanish II **(3-0-3)**

This course is a continuation of SPA-201. Lab practice is expected of students. Prerequisite: SPA-201 or placement test.

SPA-203 Intermediate Spanish III **(3-0-3)**

This course is a continuation of SPA-202. Lab practice is expected of students. Prerequisite: SPA-202 or placement test.

Surveying Technology

SUR-101 Surveying I **(2-6-4)**

Theory and practice of plane surveying: measuring distances, differential and profile leveling, compass work, transit, stadia and transit-tape surveys. Pre- or corequisite: MAT 101.

SUR-102 Surveying II **(2-6-4)**

Triangulation of ordinary precision; stadia and plane table; calculation of areas of land; cross sections, slope stakes, earth work computations, and mass diagrams; land surveying, topo, and mapping. Prerequisite: SUR 101.

SUR-103 Route Surveying **(2-6-4)**

Route surveys; simple, compound, reverse, parabolic and spiral curves, geometric design of highways; highway surveys and plans. Prerequisite: SUR 101.

SUR-104 Topographic Surveys/Photogrammetry **(2-6-4)**

The practice of methods of making topographic surveys with conventional instruments including the plane table. The use of photography for mapping purposes. The production of photomaps and the methods of ground control in aerial surveys. Prerequisite: SUR 102.

SUR-204 Advanced Surveying **(2-6-4)**

N.C. coordinate system, triangulation, trilateration, and astronomic observations. Filing and recording deeds. S.I.T. exam question review. Statistical error theory. Prerequisite: SUR 103.

SUR-205 Surveying Research **(1-3-2)**

Deed and plat searches in Register of Deed offices, municipal planning offices, engineers' and surveyors' offices (private, state, and federal), and tax offices. Prerequisite: SUR 102.

SUR-206 Equipment Calibration **(1-3-2)**

Theory and practice of adjustments and calibrations to standard surveying instruments. Prerequisites: PHY 103, PHY 106, SUR 102.

SUR-207 Field and Office Practice **(1-3-2)**

The basic elements and surveying management. Specific topics include office structure, field and office supervision, job estimating, purchasing, accounting. Financing and job records. Prerequisite: None.

SUR-209 Surveying Law **(4-0-4)**

The study of N.C. State Statutes on the practice of surveying, application of common law, and legal precedence, and legal principles of surveys and resurveys including boundary control and interpretation of deed descriptions. Prerequisite: None.

SUR-210 Construction Surveying **(1-3-2)**

Study and practice of basic principles of construction surveying including laying out structures, staking of pipes, grading, and others. Prerequisite: SUR 102.

SUR-214 Subdivision Planning **(2-6-4)**

Subdivision of land tracts including planning and detailing of roads, utilities, and recreational facilities. Drainage layouts and systems will be designed and drawn. Prerequisites: CIV 202, CIV 230, CIV 231, SUR 103, SUR 210.

SUR-215 Senior Project **(0-6-2)**

A surveying project requiring research, field procedure and technique, and calculations with a final inked plat on mylar prepared for recordation: Prerequisites: SUR 214, Senior Status.

Tool, Die and Mold Making

***TDM-1201 Machine Processes** **(3-0-12-7)**

This course is designed to introduce the student to the tools, instruments, machines, and methods used in the tool and die shop. Basic die-making theory will be presented as it pertains to simple piercing, blanking, and bending dies. Each student will be subjected to a series of projects requiring extreme proficiency. Prerequisite: Machine Shop graduate or equivalent.

***TDM-1202 Machine Processes** **(3-0-12-7)**

This course is a study of certain individual parts that go into a die assembly. Students will go into detail concerning their making, assembly, functioning and properties necessary for satisfactory service. Continued project work will point out the requirements for precise work. Prerequisite: TDM 1201.

***TDM-1204 Machine Processes** **(3-0-12-7)**

This course is a continuation of TDM 1201 in which students will make a detailed study of die-block construction, strippers and stock guides, shedders and knock-outs, nest gages, and pushers. Project work has advanced to the finish grinding and assembly stage requiring high quality work from the student. Prerequisite: TDM 1202.

***TDM-1205 Fundamentals of Mold Construction** **(3-2-0-4)**

This course is a study of plastics in general and plastic terminology and subjects the student to the fundamental processes and basic construction of plastic molds (compression, transfer, and injection), molds for die castings (pressure molding of non-ferrous alloys), and rubber molds. The student will operate compression and injection molding machines and study blueprints and component parts of the molds in these machines. Prerequisite: None.

***TDM-1206 Machine Processes** **(3-0-12-7)**

A study of die stops completes the study of die components as presented in this course. Stock strip utilization and strip layout will be covered. Die sets and purchased parts will be discussed. A study of die assembly, set up practices, punch press operation, and a miscellaneous group of methods is necessary to complete this course. Prerequisite: TDM 1204.

***TDM-1207 Special Problems and Molding** **(3-4-0-5)**

This course is a continuation of TDM 1205 and will be used to subject the student to various operations within local industries. Numerous field trips will be scheduled to review operations of pressroom equipment, molding, automatic assembly and the building and maintenance of the equipment. Assigned project work will better acquaint the student with dies, molds, jigs, fixtures and gaging. Prerequisites: TDM 1205 and be a graduate of the Machinist program or equivalent.

Tool Design Technology

TDT-101 Geometric Tolerances and Inspection Procedures (1-3-2)

Application of Geometric Dimensioning and Tolerance to insure interchangeability of parts, setting datums, establishment of tolerances, effect of datums, and tolerances on gauges and tool design, use of gauges and inspection instruments, inspection procedures, and basics of statistical quality control. Corequisite: DFT 103 or Departmental approval.

TDT-105 Manufacturing Cost Analysis (1-2-2)

An introduction to the factors that affect manufacturing costs. Concepts include fixed and variable burden rates, material usage, production rates, loss factors, set up costs, scrap recovery, design economy, economics of decision making, break-even and least cost analysis, and difference between manufacturing alternatives when related to the time value of money. Prerequisite: None.

TDT-201 Tool Design I (2-6-4)

An introduction to tool design including the design of basic jigs, fixtures, and gauges. Emphasis will be on fundamentals of tool design, tool planning, tool room practices, capabilities of applicable machine tools and cutting tools, drafting practices related to tool design, selection and use of materials and standard components, use of catalogs and manuals, and tool costs. Prerequisites: DFT 103, MAT 102, or Departmental Approval.

TDT-202 Tool Design II (2-6-4)

The theory and application of pressworking operations employed in the fabrication of sheet metal parts include operations such as blanking, piercing, punching, trimming, forming, and drawing. Design projects involve study and design of compound and progressive dies. Prerequisite: None.

TDT-203 Tool Design III (2-6-4)

The study of fundamental processes, terminology, basic construction and design of plastic molds (compression, transfer, and injection) and molds for die castings. Shrinkage factors, runner and gate types, parting lines, draft, bosses, ribs, warpage, knockouts, cams, and unscrewing mechanisms are covered. Prerequisite: None.

***TDT-204 CAD/CAM Operations in Automation (2-6-4)**

The study of automation and unique function equipment including a wide variety of applications such as automatic assembly equipment, gauging, and sorting. The course includes a comprehensive tool design project applicable to the needs of local industry and requires research and utilization of previous course work by the student. Prerequisite: Successful completion of the first six (6) quarters of the program or departmental approval.

***TDT-210 Introduction to CNC and Robotic Applications (3-3-4)**

An introduction to principles underlying numerical controlled tool concepts: tapes, tape punch, control units, machines, and methods used for manual and computer assisted programming. Survey of fundamental concepts and applications of robotic flexible automation systems. Special emphasis will be on field trips to industry. Prerequisites: MEC 101, MEC 111, or Departmental approval.

Welding

WLD-1101 Basic Welding **(1-2-0-2)**

Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembly and operating the welding equipment. Practice will be given for surface welding and flame cutting. Emphasis on electric arc and gas welding methods applicable to mechanical repair work. Bronze welding and silver soldering may also be covered. Prerequisite: None.

WLD-1112 Mechanical Testing and Inspection **(1-3-0-2)**

The standard methods for mechanical testing of welds. The student is introduced to various types of tests and testing procedures and performs the details of the test which will give adequate information as to the quality of the weld. Types of tests to be covered are bend, destructive, free-bond, guided-bend, nick-tear, notched-bend, tee-bend, non-destructive, V notch, Charpy impact, etc. Prerequisites: WLD 1120, WLD 1121.

WLD-1120 Oxyacetylene Welding and Cutting **(3-0-12-7)**

Introduction to the history of oxyacetylene welding, the principles of welding and cutting, nomenclature on the equipment, assembly of units. Welding procedures such as practice of puddling and carrying the puddle, running flat beads, butt welding in the flat, vertical and overhead position, braxing, hard and soft soldering. Safety procedures are stressed throughout the program of instruction in the use of tools and equipment. Students perform mechanical testing and inspection to determine quality of the welds. Prerequisite: None.

WLD-1121 ARC Welding **(3-0-12-7)**

The operation of AC transformers and DC motor generator arc welding sets. Studies are made of welding heats, polarities, and electrodes for use in joining various metal alloys by the arc welding process. After the student is capable of running beads, butt and fillet welds in all positions are made and tested in order that the student may detect his/her weaknesses in welding. Safety procedures are emphasized throughout the course in the use of tools and equipment. Prerequisite: None.

WLD-1122 Commercial and Industrial Practices **(3-0-9-6)**

Designed to build skills through practices in simulated industrial processes and techniques; sketching; and laying out on paper the size and shape description, listing the procedure steps necessary to build the product, and then actually following these directions to build the product. Emphasis is placed on maintenance, repairing worn or broken parts by special welding applications, field welding and nondestructive tests and inspection. Prerequisites: WLD 1120, WLD 1121.

WLD-1123 Inert Gas Welding **(1-0-3-2)**

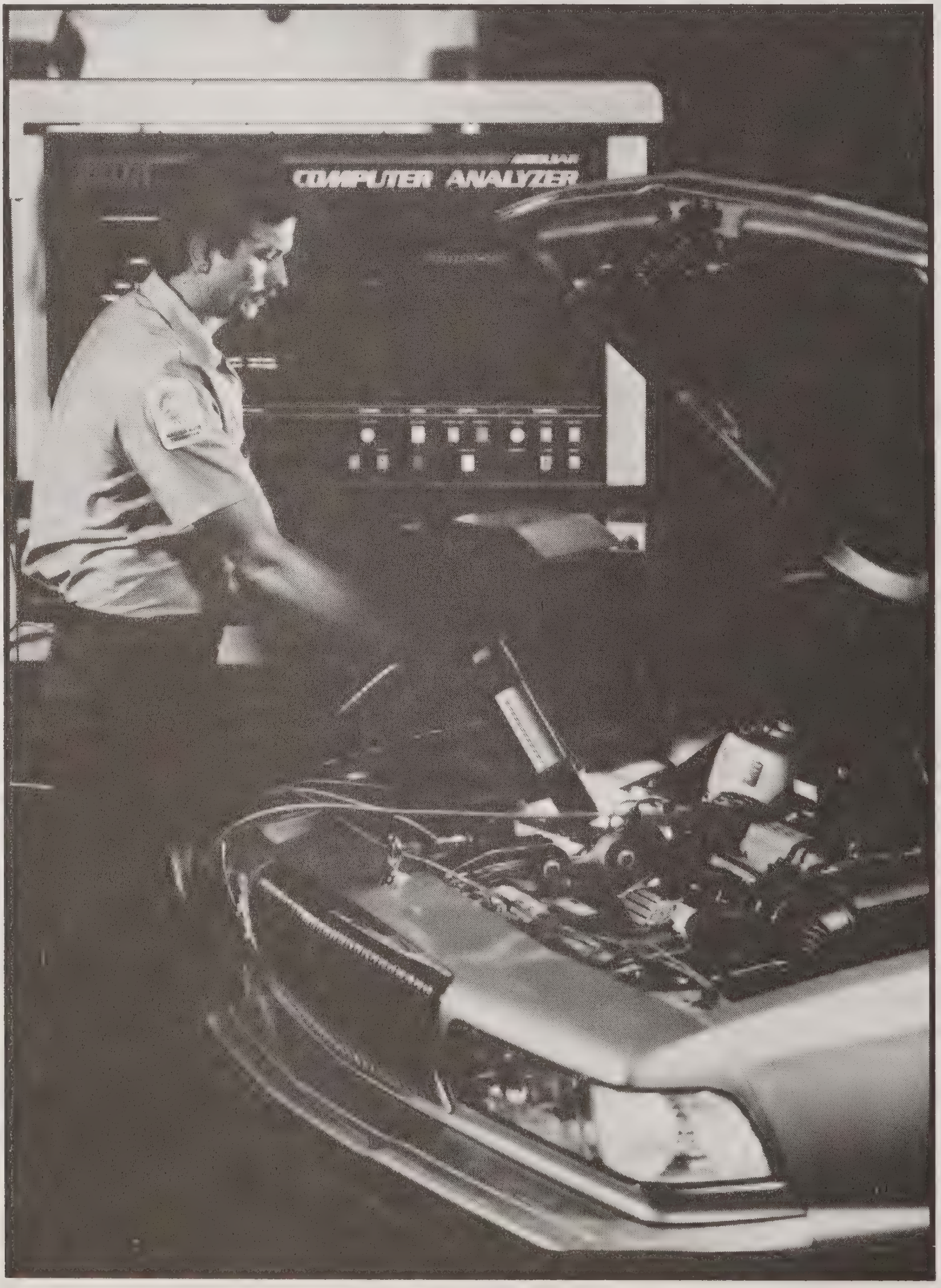
Introduction and practical operations in the use of inert-gas-shield arc welding. A study will be made of the equipment, operation, safety and practice in the various positions. A thorough study of such topics as: principles of operations, shielding gases, filled rods, process variations and applications manual and automatic welding. Prerequisites: WLD 1120, WLD 1121.

WLD-1124 Pipe-Welding **(3-0-12-7)**

Designed to provide practice in the welding of pressure piping in the horizontal, vertical, and horizontal fixed position using shield metal arc welding processes according to Sections VIII and IX of the ASME code. Prerequisite: WLD 1121.

WLD-1125 Certification Practices **(3-0-6-5)**

This course involves practice in welding the various materials to meet certification standards. These student uses various tests including the guided bend and the tensile strength tests to check the quality of his work. Emphasis is placed on attaining skill in producing quality welds. Prerequisites: WLD 1120, WLD 1121, WLD 1123, WLD 1124.



New automotive program uses high-technology.

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B.A., Western Carolina University

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Iona McCurry .... Duplicating/Mail Clerk

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FACULTY

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B.S.N., Berea College; M.Ed., University of North Carolina at Chapel Hill; M.S.N., University of Tennessee at Knoxville

Karen M. Baker, R.N., F.N.P., (1984) .... Instructor, Nursing
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Mary Elizabeth Haney, R.N. (1981) .... Instructor, Nursing
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Jo Ann Holderman, R.N. (1968) .... Instructor, Nursing
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Sharon E. Metcalfe, R.N. (1988) .... Instructor, Nursing
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Brenda Phillips, (1992) .... Instructor, Radiologic Technology
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B.S.N., Berea College

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R.T., Duke University Medical Center; B.S., Mars Hill College

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Shaun Riley Tate, R.D.H. (1978) .... Chairperson, Allied Dental Programs
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David L. Warren (1978) .... Chairperson, Law Enforcement Technology
A.A., Davidson County Community College; B.A., Pfeiffer College; M.A., University of South Carolina; further graduate studies: N.C.S.U.

Laura S. West, M.T. (1970) .... Chairperson, Medical Laboratory Technology
B.S., Western Carolina University

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B.S., M.A.Ed., Western Carolina University

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B.S., SUNY at Albany; M.S., Chaminade University of Honolulu

Marie Love Cochrane (1989) .... Instructor, Mathematics
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William L. Collins (1972) .... Chairperson, Humanities
B.S., M.S., University of Tennessee; Ed.S., Western Carolina University; Ph.D., Union Graduate School; Licensed Practicing Psychologist

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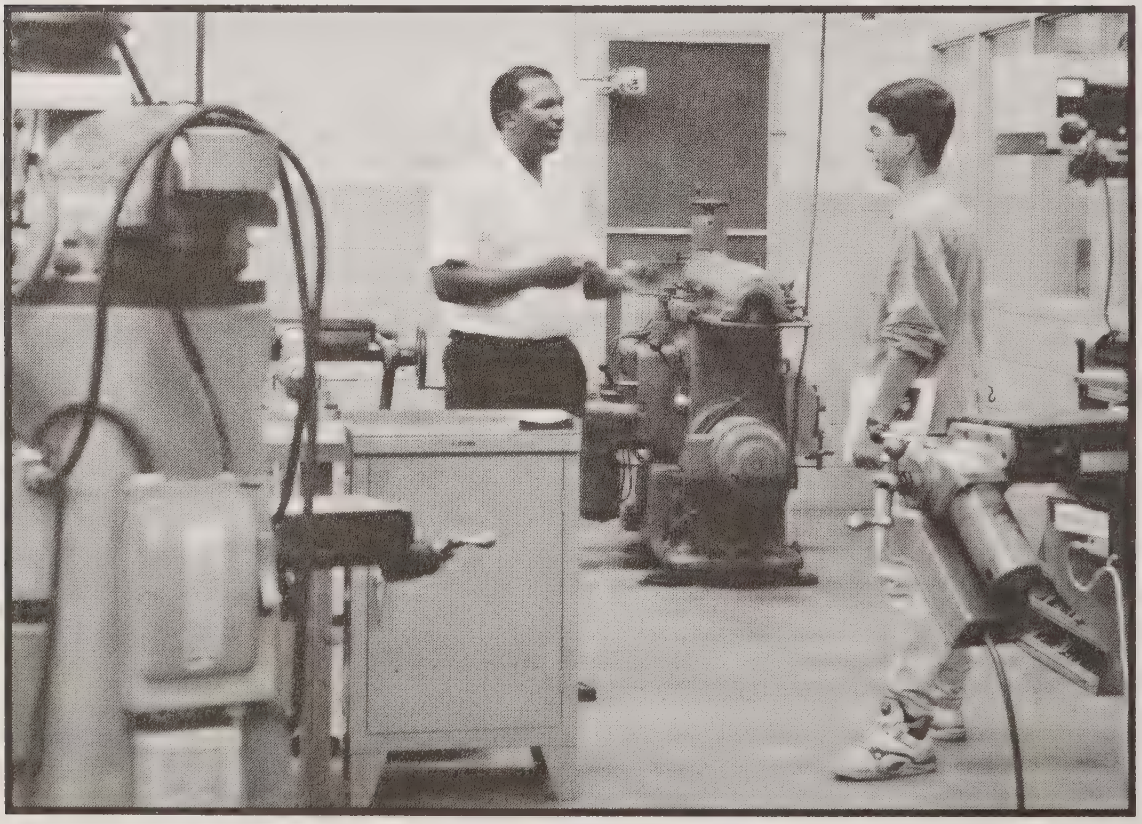
Mark Wright (1992) .... Instructor, Electronics
A.A.S., Asheville-Buncombe Technical Community College; further study, Western Carolina University



Out-of-class help is an important learning technique.

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This catalog should not be considered a contract between Asheville-Buncombe Technical Community College and any prospective student.

Curriculums may be altered to meet the needs of individual departments. A minimum enrollment is required for offering or continuing a class. Adjustments in course sequence and schedule may be made as necessary.

All charges for tuition and fees are subject to change as required by the Board of Trustees.

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1993

JANUARY

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MARCH

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MAY

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NOVEMBER

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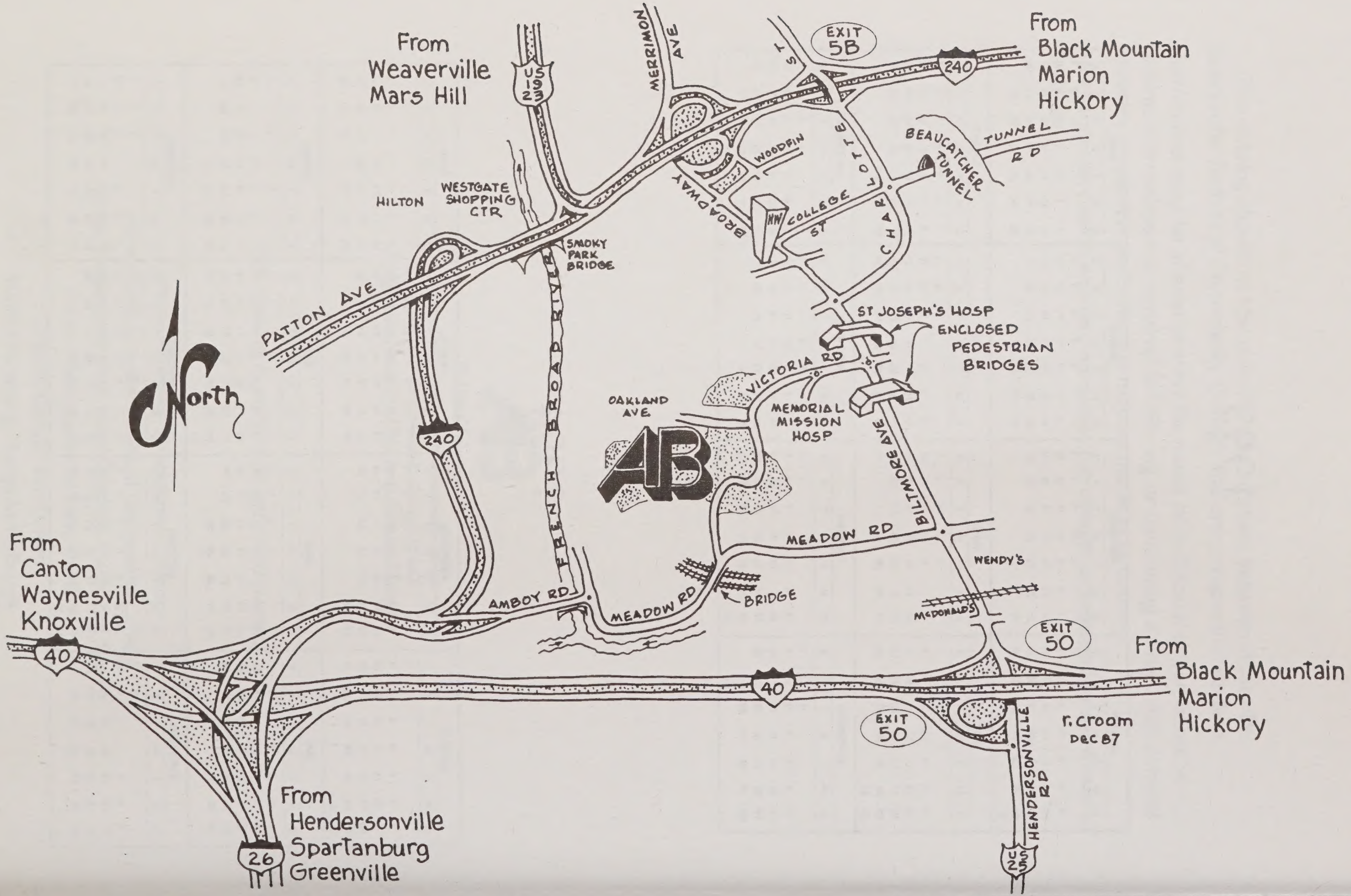
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